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ACORN USER

Essential for all users of 32-bit RISC OS computers

Into the future

We look into our crystal ball and discover the future for Acorn

Magazine design with Impression

Colour Scanners under review



FEBRUARY 1995 Issue 152 £2.95

IDG MEDIA

New Releases...

Impression Publisher Plus

A new professional edition of the best selling Impression DTP program.

This version offers enhanced colour control (named and spot colours), EPS and OPI support for professional full colour DTP work.



Publisher Plus

£299 + VAT (£351.32 inc)

Upgrade from Impression Publisher

£130 + VAT (£152.75 inc)

MacFS Light

A MAC DISC READ & WRITE UTILITY FOR ACORN RISC COMPUTERS

A new cut down version of MacFS designed for use only with floppy drives - for transferring data between Acorn high density or 800K discs and Mac SuperDrive or 720K floppy discs. The original MacFS can also be used with external hard drives, Syquests and opticals.

MacFS Light £49 + VAT (£57.57 inc)

MacFS £99 + VAT (£115.32 inc)

ClipArt 2 CD

The results of the second ArtWorks clip-art competition. This CD includes over 500 new clip-art examples, plus all those included in the ArtWorks package.



It also contains a new collection of high quality 24-bit JPEG and TIFF compressed photographs.



ClipArt2 CD

£19 + VAT (£22.32 inc).

EIDOSCOPE

Eidoscope is based on video editing software from Eidos (costing some £3500) which is used in many professional studios. Suitable for editing Eidos movies (created with an Eagle card) - cut and paste pieces of movies together to create your own complete Replay movie. Further details of the powerful features are available on request. Requires a Risc PC.

£169.00 + VAT (£198.57 inc).

Network Spooler

FOR TURBODRIVERS & LASERDIRECT

This package includes a copy of the TurboDriver software and network spooler software allowing any machine connected to an AUN compatible network to print to a common printer. The software also supports LaserDirect printers and includes an unlimited network site licence.

Network Spooler

£149 + VAT (£175.07 inc)

Formulix

A completely new mathematical and equation formulae editor. Outputs Drawfiles and is OLE compatible allowing it to integrate with suitable applications such as Impression Style and Publisher. Features include full undo, WYSIWYG display, matrices, drag and drop etc.



Formulix

£69 + VAT (£81.07 inc)

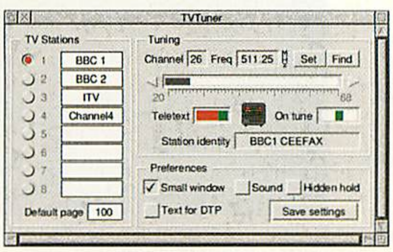
Upgrade for existing Equasor owners (including bundled version)

£49 + VAT (£57.58)

...For 1995

TV TUNER

An expansion card consisting of a TV Tuner module that can output composite video signal (TV can be watched either on a separate monitor, or on your computer screen via a suitable video digitiser). Optional Teletext software allows Teletext pages to be viewed on screen, and saved as text or sprites etc.



TV Tuner
£89 + £6 p&p + VAT (£111.62 inc)
TV Tuner + Teletext Software
£159 + £6 p&p + VAT (£193.87 inc)

PRESSURE SENSITIVE GRAPHICS TABLETS

The brand new ArtPad graphics tablet from Wacom. A near A6 pressure sensitive tablet that offers over 2000dpi resolution, 256 levels of pressure and cordless pen. Can replace or work alongside the mouse. Compatible with all applications including 'pressure' capable programs such as Photodesk & the Eesox ArtWorks Pressure Tool.

Wacom ArtPad
£169.00 + VAT (£198.57 inc)
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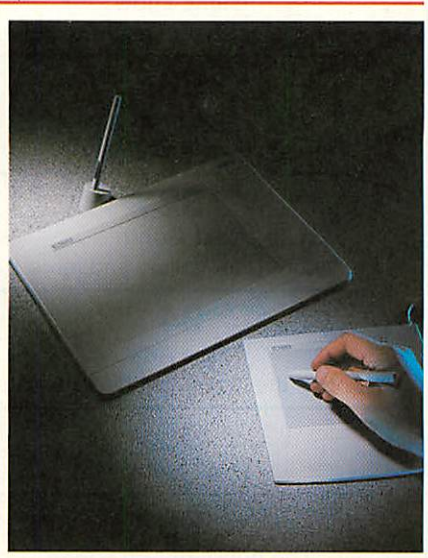
MOVIE Magic

Amazing new expansion card for Risc PCs, allows full motion, full screen video with CD quality stereo sound, to be obtained from standard MPEG movie files. With a compatible CD player it can play VideoCDs to provide better than VHS quality video.

Scart RGB video output to a suitable (ie PAL frequencies) monitor. An optional upgrade (available later) allows video in a window on a Risc PC as an alternative to video out.



Movie Magic
£249 + £6 p&p + VAT (£299.62 inc)
Movie Magic Video in a window - available later £TBA

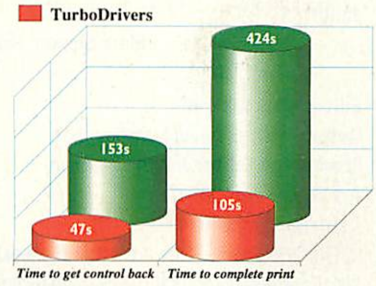


Computer Concepts Ltd

RISC OS 3 Turbo DRIVERS VERSION 4

The latest version of the TurboDrivers supports Acorn !Access network software, is compatible with the Risc PC and the latest versions of !Printers.

Risc PC TurboDriver timings



Now offers better colour control and very significant performance gains over any alternative printer drivers. Versions available for all the popular inkjet printers, including the new Epson colour Stylus. Please specify printer when ordering. Requires Risc OS 3.1or later.

TurboDriver (Canon, HP or Epson)
£49 + VAT (£57.58 inc)

The BJC-4000 & TurboDriver

The latest inkjet printer from Canon - unique in their range in that it offers both black and white and colour capability. Mono printing is extremely fast and can be at up to 720dpi. It can also produce high quality 360dpi colour prints. The inks are fast drying and water resistant. An ideal solution for those who print primarily in black and white but also require colour. Requires RISC OS 3.1 or later.

£369 + £10 p&p + VAT (£445.32 inc)

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Editor's letter

We've finally done it: a complete issue of *Acorn User* produced on an Acorn machine. It's taken a lot of effort and time, and you can read all about how to create your own magazine from scratch on page 41; even the cover was created on a Risc PC. I'm sure you'll agree that the result is at least as good as, if not better, than the magazine when it was produced on Apple Macs.

With this issue we say goodbye to our erstwhile art editor, Carl Fox. I'd like to say thank you for all the hard work he has put into the magazine over the last year, and wish him well in his new career. We welcome Alan Jones as *Acorn User*'s new art editor.

Mark Moxon, Editor

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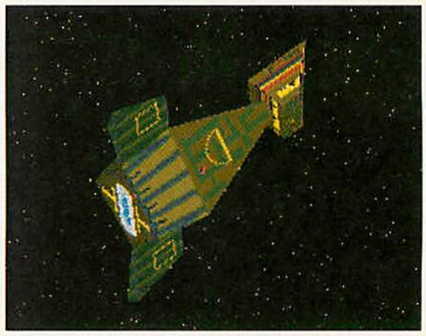
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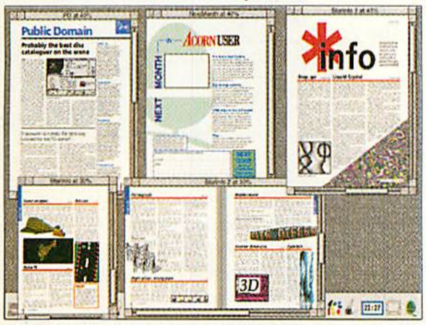


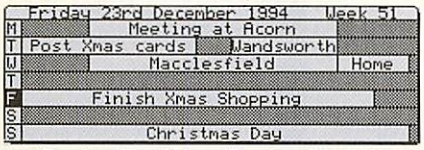
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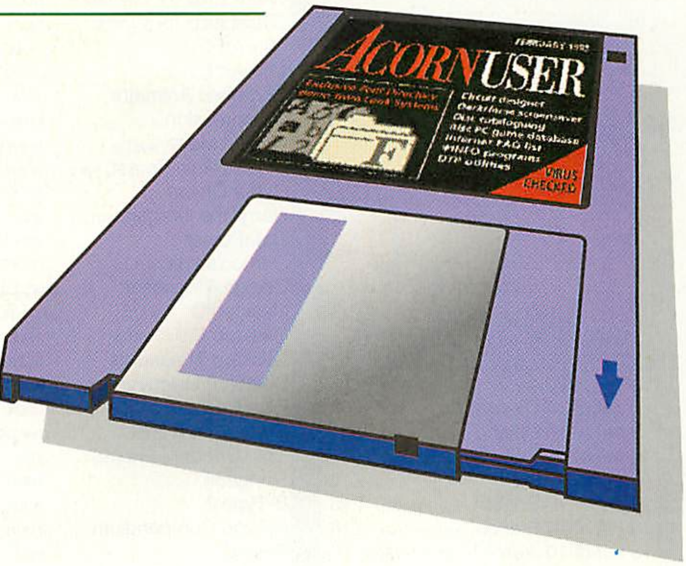
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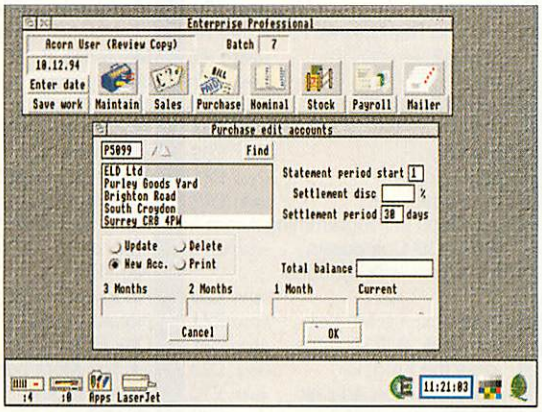
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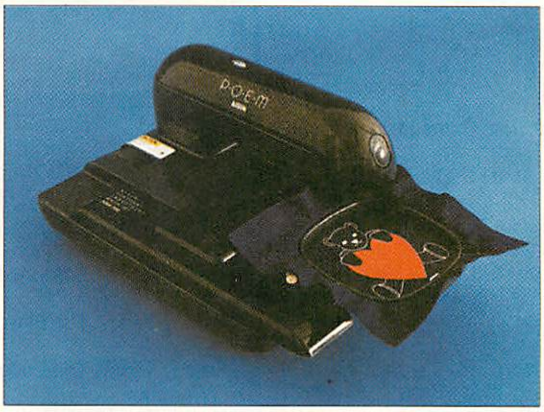


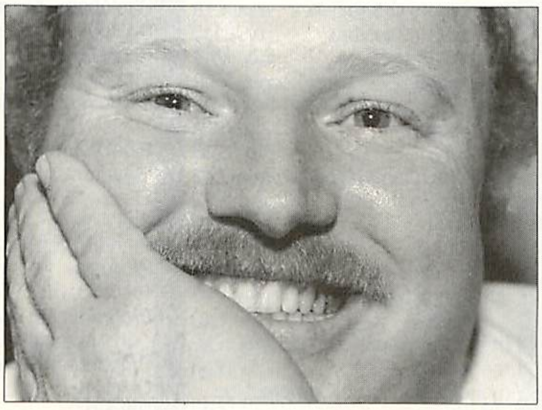












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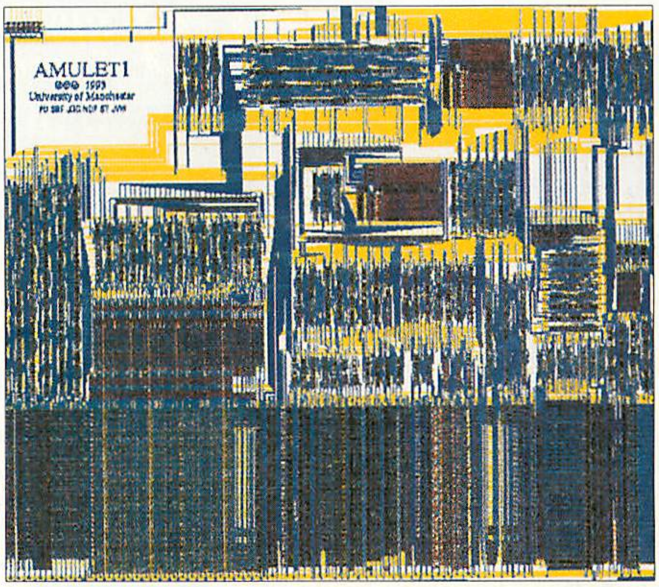
ARM Ltd acquires rights to the asynchronous processor project

ARM Ltd has announced it has done a deal with the University of Manchester to acquire the rights to an advanced research project into a new generation of high speed but low power consumption microprocessors designed around asynchronous technology. The research team is headed up by Professor Steve Furber, an ex-Acorn engineer and one of the key people responsible for designing the original Acorn ARM (Acorn RISC Machine) chips from the mid 1980s.

Furber's team is exploring the possibilities of processors which aren't driven synchronously by external clocks. The contemporary problem with processor design is high power consumption as chips get larger and larger, containing – in some instances – several million transistors. All these transistors need to be switched millions of times a second, even when the chip is largely idle. This eats up considerable electrical energy and causes large amounts of heat to be dissipated. It also means the chip can only be clocked as fast as the slowest circuit within the chip.

In an asynchronous processor, only the parts of a chip which need to be active at a particular moment will be active. This means much less relative power is required and therefore dissipated as heat. Another problem is that the sheer physical size and complexity of some conventional chips means they have to be carefully engineered simply to enable clock signals to reach their destinations. There is also an expectation that asynchronous chips may turn out to be more efficient in performance terms too, as frequently-used circuits can be optimised for performance.

Furber's team successfully designed its first asynchronous chip, code-named AMULET1, in March 1994. It is an ARM60 code-compatible device and, according to ARM Ltd, some lessons learned in the AMULET1 design have already been applied to forthcoming conventional ARM designs like the ARM810.



The AMULET1 chip, which appeared on silicon back at the start of 1994. This is the first asynchronous chip to be designed round RISC technology.

ARM Ltd
Tel: (01223) 813000
Fax: (01223) 812800

Acorn extends Advantage and launches VISA credit card

ACORN'S Advantage 'points for purchases' programme has been extended and now encompasses the company's new personalised Acorn Affinity VISA credit card. Advantage started off by awarding points to anyone purchasing Acorn computers. These points can be donated to schools who save them and trade them in for school resources. Now Affinity VISA card purchases can earn Advantage points. Another new source of points is the market research company, ICD, which is providing 15 points for every consumer questionnaire completed by pupils' parents. If a school manages to return 900 completed surveys, it can earn an Acorn computer outright.

Sometimes Acorn customers have been surprised by the Advantage scheme benefits. Mr J Ainsleigh Davies, head teacher of Dyffryn Teifi Comprehensive in Dyfed, commented: 'When we made the decision to equip the school with Acorn Risc PCs we had no idea that Acorn Advantage was just being launched.' With over 16,000 points earned from the purchase of 16 Risc PC systems, the school can afford to trade them in for CD-ROM drives or possibly a video recorder.

Mrs J Meadows, of Halifax, commented: 'I think Acorn Advantage is a great promotion. I bought an Acorn Learning Curve computer as a birthday gift for my children and now I have the added bonus of giving my local primary school the chance to have extra equipment for free. It's good to be able to help the local community.'

Acorn Computers
Tel: (01223) 254254

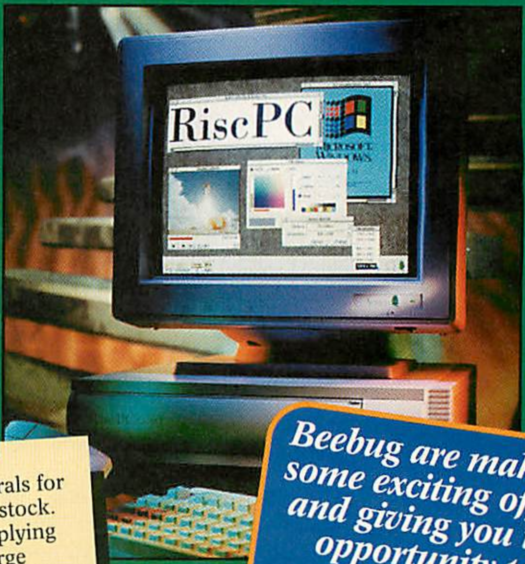
CC adds new importers

WITH the arrival of a new collection of file filters from Computer Concepts, you can now save *Impression* text documents as RTF Rich Text Format files, as well as load RTF files. CC also says that the overall RTF text loader is a vast improvement over the original version.

RTF is very useful as it is practically a standard way of converting documents containing a degree of style, font and character set information from one format to another. For example, it's a standard way of exchanging documents with *Microsoft Word*. It's also a text-only format which is convenient for sending as electronic mail. CC has also added a new *WordPerfect for Windows* file loader. Pricing is likely to be below £30.

Computer Concepts
Tel: (01442) 63933

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New book from children's author who uses Acorns



COLIN Thompson, the writer of children's books who uses Acorn equipment to compose his layouts (see The Moxon Interview, January 1994), has a new book published by Julia MacRae Books.

Ruby is the delightful story of a ruby-red Austin 7 car, which arrives with a picnic party to disturb the lives of a family of tiny, happy people who live in the roots of an old tree. As with all of Colin's books, the storyline is delightful, but the illustrations are something else: they contain so much information and amusing little pictures that they make the books readable again and again.

It's this aspect of Colin's work which gives *Ruby* its twist. In a similar way to *Masquerade*, there are clues hidden in six pages of the book which point to the numbers and letters which make up Ruby's number plate; if you can work out the combination, then you can win a genuine ruby-red Austin 7, the star of the book. It's not easy: the editor's been studying the book for a while, and he doesn't have one letter yet...

Another exciting aspect of Colin's work is that it might lead to a CD-ROM. Details are sketchy, but there are hopes that a native RISC OS version can be created. Keep your eyes on the news pages for more information.

Ruby retails at £9.99, and the competition is open until 1 September 1995.

Julia MacRae Books
Tel: 0171-973 9750
Fax: 0171-233 8791

Acorn gets into the newspapers

AS its main sponsor, Acorn is to support this year's Newspapers in Education (NiE) 'Making the News' project, in association with BBC Schools Radio. The project is designed to encourage children in schools to produce tabloid-style newspapers or radio news broadcasts.

The best examples of work produced for the project can then be entered into a national competition, which closes at Easter. Winners will be selected by the likes of the BBC's Michael Buerk, Radio One's Sybil Roscoe, George Kelly, the national manager of the NiE, and Alan Bennett, Acorn Primary Schools Manager (not the famous Northern playwright). Two winning entries will be made into a professional newspaper and a Radio 3 broadcast. Prizes will be presented at the national NiE conference in Leeds during June.

Acorn's general manager for education, Peter Talbot, commented: 'Making the News is particularly relevant to us as it develops children's reading and writing, or traditional literacy, as well as the increasingly important New Literacy Acorn has identified.'

Acorn Computers
Tel: (01223) 254254
Fax: (01223) 254262

VTi name change and releases

VTi, formerly Vertical Twist, launched a couple of new products at BETT '95. First there is VTi's new Printer Port Sampler, which saves a podule expansion card port for other uses. This has both line and mic inputs, and a microphone is included, as is *Sonor*, a powerful sample manipulation package. File compatibility includes *Tracker, Module, Armadeus* and *PC WAV* files. *Talking Canvas* is another piece of software included and can be used to simply and easily link sound samples to images, ideal for classroom use. VTi's Printer Port Sampler is priced £44.95 + VAT.

The other new package from VTi is *HeartBeat*, a heart monitoring hardware and software system. A receiver unit plugs into the serial port and this communicates wirelessly at up to nine feet with a transmitter attached to a special chest belt containing sensors. Supplied software allows you to record an individual's heart rate and then calculate calorific burn rate and analyse maximum and minimum heart rate over a period of time. Data can be presented in graphical form as well as exported as data for use in other packages. The complete package is £99 + VAT.

VTi
Tel: (01243) 531194
Fax: (01243) 531196

Steady that mouse

Some Acorn users are inclined to agree that the standard Acorn mouse is a little on the lightweight side, making it less positive to use, especially with the latest trend towards low-friction plastic-topped mouse mats. So what's the solution? Heavier balls, according to Oak Consultants, four times heavier to be more precise. Oak Consultants can supply heavier replacement mouse balls at £3 a go, fully inclusive.

Oak Consultants
Tel: (01279) 718596

PaperOut distributor

Cumana has become the sole UK distributor for the Acorn version of *PaperOut*, the information retrieval software package produced by the German company, Tools GmbH, which enables ordinary CD-ROM drives to access 'electronic book' (EB) information from Sony Data DiscMan EB discs. These discs can display simple diagrams as well as text and can also contain several hours of audio. EBs cover dictionaries, encyclopedias, languages, literature, travel and wine guides. EBs start at around £30. *PaperOut* software for RISC OS is priced £49.95 + VAT.

Cumana has also released the seventh edition of its *CD-ROM and Multimedia Portfolio*, a 72-page guide to multimedia products divided into six sections: CD-ROM Software, CD-ROM Drives, Multimedia Systems, Networking and Communications, System Expansion and Peripherals.

Cumana
Tel: (01483) 503121

LabelStar

A number of labelling programs of varying usefulness have appeared recently and the latest is *LabelStar* from Circle Software. This one has a built-in address database and is claimed to be very easy to use. Both graphics and text can be combined in label designs and there is a useful on-screen preview function. A nice touch is the ability to print just one label from a sheet, enabling the remaining unused labels to be used later. *LabelStar* is priced £49.50 + VAT.

Circle Software
Tel: (0793) 770021

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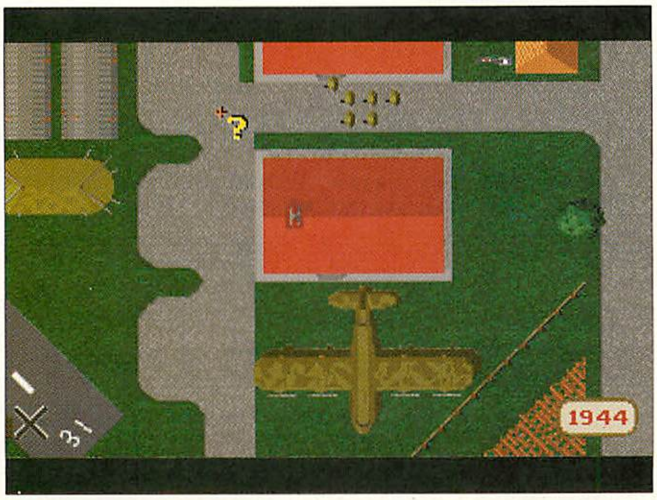
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New titles from Longman Logotron and BBC

THE long-time collaboration between Longman Logotron and the BBC has been extended once again with the a pair of new *Landmarks* titles for history and geography, respectively. Firstly there is *Landmarks Microworlds: The War Years*. An earlier version was called 'Invasion'. The scene is set in a small village called Westerleigh. Users are able to explore the way of life in this typical rural setting starting in 1938 and how it changed during the second world war, culminating in the end-of-war celebrations of 1945. The virtual world of Westerleigh can be examined in minute detail: you can lift off the roof of a typical home and look inside rooms and examine objects and artifacts. The ability to ask village inhabitants simple questions adds to the reality.



Landmarks Microworlds: The War Years from Longman and the BBC.

Landmarks PinPoint Datafile: Looking at the World is for either *PinPoint* or *Junior PinPoint* users and includes data sheets on 195 countries, including population statistics and environmental details. These include birth rates, life expectancy, land area, average rainfall, temperature, daylight hours and other facts.

Landmarks Microworlds: The War Years is priced £25.50 + VAT, or £75 + VAT for a site licence. A single copy of *Landmarks PinPoint Datafile: Looking at the World* costs £14 + VAT while a site licence is £36 + VAT. Other titles due out now include *Britain since 1930, The British Monarchs* and *Ancient Civilisations*.

Longman Logotron
Tel: (01223) 425558
Fax: (01223) 425349

New educational titles from CCS

CREATIVE Curriculum Software has released a collection of new education titles. *MathsGen*, priced £12.95 + VAT, can be used for producing simple printed maths worksheets covering the basic arithmetic functions of addition, subtraction, division and multiplication. Problems can be presented horizontally or in columns and with as many as four place values. Problems can be generated without typing or calculation using a menu system which governs difficulty, and can be fine tuned to progressively increase difficulty. For more versatility, *MathsCard* (which costs £49 + VAT) includes simple and mixed fractions, decimals, long multiplication and division and magic squares.

If you're a teacher and the administrative side of organising school trips is usually a headache, Creative Curriculum's next new package is just for you. Called simply *Trip*, the package helps the trip organiser record and check all relevant details and manage costs. On the accounting side, *Trip* can handle deposit payments, staged payments, special prices, payments for optional activities and will also alert the user to late payments. On the organisational front, *Trip* has deadline alerts and can record personal details of the party members (pupils and staff), even including passport details and photos as well as individual medical details if required. *Trip* is priced £14.95 + VAT for a single user or £89 + VAT for a site licence.

Other Creative Curriculum titles that were launched at BETT include the following: *Spelling Book* (£39 + VAT for single user version, £89 + VAT for site licence) for improving spelling in conjunction with a word processor, including three spelling games; *Mechanisms* (£49/£99), a CD-ROM demonstrating the link between mechanical theory and practice, useful for maths, technology or physics; *Woodland Birds* (£49/£99), a CD-ROM natural history encyclopedia complete with colour photos, bird song recordings and maps; *Maths CD* (£49/£99), an interactive CD-ROM title dealing with shape, volume, area and mass and targeted at secondary education; and finally, there is *Conjuguez!* for learning French verbs at GCSE and A-level. *Conjuguez!* is priced £16.98 + VAT, *Conjuguez! Plus* is £29.70 + VAT and a special version for schools to add new verbs, *Conjuguez! Education*, is £39/£89.

Creative Curriculum Software
Tel: (01422) 340524
Fax: (01422) 346388

Sonamara cuts Genlock adapter price

Sonamara's MultiGen high-band Genlock adapter, MultiGen, has been reduced in price to £399.95 inc. VAT from £429.70 inc. VAT (see review in *Acorn User*, December 1994).

The MultiGen can provide a computer with simultaneous monitor and TV output and is compatible with RGB, S-Video and composite video signals. Four modes include computer to video, genlock, overlay and mix.

The compact unit can also perform effects like under/overscan, freeze frame and fade. Both Pal and NTSC TV standards compatibility are catered for. For £428.87 inc. VAT (which is still less than the original price of the adaptor on its own) the MultiGen unit can be supplied with suitable titling software.

Sonamara
Tel: (01626) 873763
Fax: (01635) 297866

ARM Club Open day in Kent

On Saturday 19th March, The ARM Club will be holding another of its open days, this time in Kent. The venue is Merton Court School, Sidcup.

The main theme of the day is education and it is expected that some education companies like Sherston Software will be on hand to demonstrate their products. Public Domain discs for just £1 will also be on sale from The ARM Club PD Library as usual.

Software produced by Arm Club members will also be on show, including *GameOn!* for the Risc PC (see review in the Games section on page 51).

For more details, write to: FREEPOST ND6573, London, N12 0BR or Tel: 0171-624 9918, Fax: 0181-446 3020.

Holdfast on the move

Holdfast Computing, vendors of joypads for special needs users, among other things, has moved to the following address: Park View, Queenhill, Upton upon Severn, Worcestershire, WR8 0RE, tel/fax: (01684) 59470.

NEWS

Sibelius 7 is a winner, and that's independent

PRAISE for Sibelius Software's music notation composition and publishing package, *Sibelius 7*, appears to know no bounds. Recently the package received another rave review, this time in *The Independent* newspaper dated 14th November 1994. The article is also revealing in its exploration of the issue of having to use a non-standard computer in the form of an Acorn, rather than the more 'established' standard of a PC or even a Macintosh.

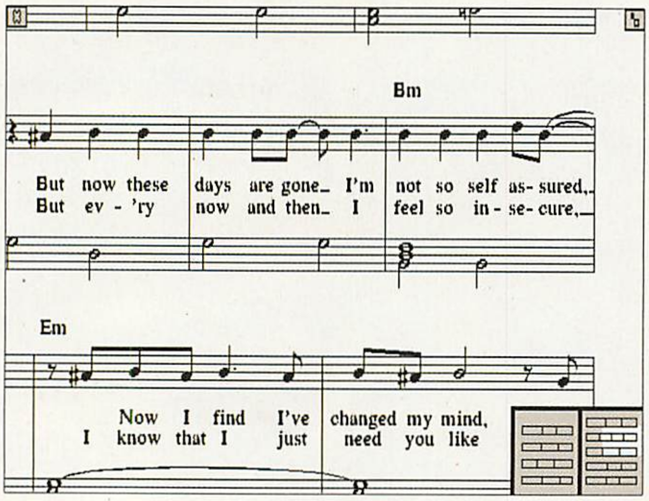
The Independent's Robert Maycock wrote that he found *Sibelius 7* easier to learn than any word processor he had worked with, and described how he felt the package had been endowed with musical instincts, even describing its use as euphoric. 'Publishers have been sending more and more scores to *Sibelius 7* owners for copying and it is easy to understand why,' he added. The 'expert system' built into the package is the reason for this intelligence: *Sibelius* knows all the rules of musical notation, and constantly applies them to the piece being edited, almost instantly.

There is some minor criticism: you can't yet play a piece in real time, for example. But one bit of good news is that version 2.5 has a new and unique *Espressivo* feature which can now play renditions of scores via MIDI complete with phrasing and dynamics. *Future Music* magazine was impressed enough to include a demo of the *Espressivo* feature on its January 1995 issue cover-mounted CD.

Maycock also has some slight reservations about the Acorn platform, not because of its performance but because it's not fully PC-compatible. But it's interesting to see that the arrival of the Risc PC 486 option has muted any harsh criticisms in this department and Maycock confirms that the Finn brothers, who produced *Sibelius 7* and who run Sibelius Software jointly, are in no hurry to produce a PC version of their package.

Inevitably, Maycock suggests that if money is no object, musicians should consider buying an Acorn just to run *Sibelius 7*. Now where have I heard that before?

Sibelius Software
Tel: (01223) 302765
Fax: (01223) 351947



Sibelius 7 is a winner, according to *The Independent*.

Datathorn lands first big Super Server contract in Scotland

DATATHORN computer consultancy from Loughton, Essex has landed the first big contract to supply a school-wide network based on the Datathorn Super Server system which was launched late in 1994. The Super Server project was started in 1989, the product of research at both Oxford and Cambridge universities.

The server itself is Acorn-approved and produced by Motorola for Datathorn and is designed to work with both optical fibre and copper cabling. Motorola supplies a five-year warranty with each server. Future-proofing is built in and files can be shared by a number of different platform clients on the network, including Acorns and PC-compatibles, for example. Datathorn also says non-technical staff, like teachers, are able to perform basic server maintenance procedures.

Datathorn trialed the schools' Super Server system last summer at Chigwell School and St. Aubyns in Woodford, Essex – where no system failures were encountered during the entire 11 month trial – but the first commercial customer is to be Hutcheson's in Scotland. There they have 27 Acorn Risc PCs, 40 older Acorns and a dozen PC-compatibles. Network installation consultancy came from i-cubed who devised an integrated copper and fibre transport.

Datathorn
Tel: (0181) 502 4221

New version of Datafile's PDCD 1

Because of the adverse comments made about some of the more 'dodgy' pictures available on the *PDCD 1* CD-ROM from The Datafile and CD-Circle, Desktop Laminations has re-mastered and re-released the disc, calling it *PDCD 1 Issue 2.*

The disc now contains over 475Mb of compressed material, giving over 800Mb when decompressed; this compares to just over 270Mb of uncompressed data on the first version. All the software has also been vetted for use on a Risc PC, unlike the original.

The price is £36 inclusive, and CD-Circle members can buy it for £30, including postage. An upgrade for existing owners of *PDCD 1* will cost £10 if you return your disc, and the new disc should be available by the end of January.

CD-Circle
Tel: 0117-979 9979

School computer thieves can be thwarted

A Kent infants' school has apparently found the answer to a serious problem it was having: computer theft. The school's head teacher commented that computers were disappearing on a regular basis, in fact as fast as they were being replaced. In the end the school resorted to a Rolsafe computer cabinet, produced by Lancaster-based Security Window Shutters. As expected, the thieves returned once more but unsuccessfully tried to force the new security cabinet.

Security Windows Shutters
Tel: (01524) 33986

Sony the way to go?

Sony has announced details of its first storage systems based on its minidisc (MD) technology. The drives, which could well replace the floppy disc as a cheap and universal storage medium, cost around £400 and use 2.5in MD discs with a capacity of 140Mb, with a data transfer rate around that of CD-ROM. It'll be interesting to see if the technology reaches the Acorn platform.

Sony
Tel: (01932) 816000

An ultra hi-performance fileserver

nucleus

Nucleus is an ultra high-performance fileserver for Acorn networks. It offers greater speed and flexibility than any other Acorn based server whilst remaining backwards compatible with older generation networks and computers.

Care has been taken to streamline every aspect of the design so that Nucleus performs well even under extreme load from large nets. The product has been designed to handle upwards of 100 computers.

Larger hard disks, larger files, larger directories, faster loading and saving, improved printing and far more powerful management tools are just some of the improvements provided by Nucleus. Phone for a brochure or to request a demonstration.

Pricing

Nucleus 1-10 stations	£ 199.00
Nucleus 11-25 stations	£ 399.00
Nucleus 26-50 stations	£ 549.00
Nucleus 51-100 stations	£ 749.00
Nucleus 100+ stations	£ 1,299.00

Nucleus Linkable Components (NLCs)

CD Server NLC	£ 199.00
Netgain NLC – fast application server	£ 199.00
Digistore NLC – tape backup software	£ 79.00
PC Connect NLC – for DOS connectivity	£ tba

digital services

9 Wayte Street, Cosham, Portsmouth
Hampshire PO6 3BS Tel 01705 210600

CD sharing for networks

CD server

CD Server is a software product which allows one or more CD-ROM drives to be shared over a network. To the network clients, it is just as if they have a local CD-ROM drive attached to their computer.

By allowing every station on your network access to a single CD-ROM, CD Server saves the massive costs involved in purchasing a drive for each computer. CD Server will transform multimedia accessibility on your network.

Available either as a stand-alone server or as an NLC.

CD Server software	£199.00

All prices shown are ex-VAT, which is chargeable at 17.5% on all items shipped within the UK.
Please add £1.50+VAT carriage to all orders.



The Canon BJC-4000 and

RISC OS 3 Turbo DRIVERS

The BJC-4000 is unique new printer in the Canon range which offers both black and white and colour capability. It is designed to appeal to users who primarily print in black and white but who also have a colour requirement. Mono printing is extremely fast (about twice as fast as the BJ-200 on average) due to a special high-speed black ink cartridge and printing can be at a resolution up to 720 dpi using interpolation. However, it can also produce high quality 360 dpi colour prints. The inks have been specially developed by Canon for this printer and are fast drying and water resistant.

The printer is shipped with a BJC-4000 specific version of the new V4 TurboDrivers. Timing tests on a Risc PC indicate that the TurboDrivers still offer a significant speed advantage over the standard Acorn drivers, returning control and completing the print between 3-4 times faster for an average page. The TurboDriver software also supports advanced grey-component replacement, which prevents over saturation and produces more accurate colour reproduction.

The BJC-4000 is supplied with the Turbo-Driver V4 software (and DOS/Windows drivers), manual, printer cable and a set of colour inks for £369 + £10 p&p + VAT (£445.32 incl.) It is suitable for all models of Acorn RISC computer with RISC OS 3.1 or later. 4 MBytes and a hard disc are recommended. Available now direct from Computer Concepts.

Computer Concepts Ltd

E&OE. Details are subject to change.

Gaddesden Place, Hemel Hempstead, Herts HP2 6EX Tel 01442 63933 Fax 01442 231632
Email: Info@cconcepts.co.uk

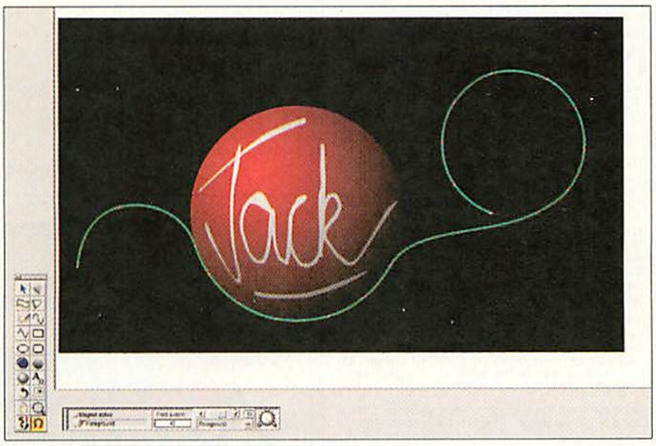
Graphics

Additional ArtWorks modules arrive

TWO new modules for the definitive vector graphics package *ArtWorks* have been launched by the package's publisher, Computer Concepts.

Neither of the tools were developed in house, but they take full advantage of the program's architecture, which allows third parties to create their own modules for specific requirements not already included in the program.

The first to arrive, and already mentioned in *Acorn User*, is the pressure-sensitive line drawing tool from Eesox/ Vaughan Allenson. Strictly speaking the tool is not a line drawing tool as it constructs objects and not simple lines, so enabling perspectivisation and graduated filling of the lines created. In action the tool is very fast, and when used with the Eesox Wacom graphics tablet or the Computer Concepts Art Pad, you can achieve effects more usually associated with painting packages, with the width of the 'brush strokes' responding perfectly to the pressure applied to the tablet.



Freehand pressure tools and magnetic attraction capabilities for *ArtWorks*.

The second tool is called *Arranger*, and it's a magnetic tool from a German company called Open Sky Projects. *Arranger* applies an attractive force to selected objects, or even entire layers, which allows intelligent snapping of points and edges onto the magnetic objects. The option to vary the extent of the magnetic field is an excellent feature and the tool itself is especially useful when creating complex objects based on the outlines of overlapping shapes.

Both these tools are well priced and could be just the thing you're looking for. *The Pressure Tool* is £39 + VAT, and *Arranger* is £29 + VAT.

Computer Concepts
Tel: (01442) 63933

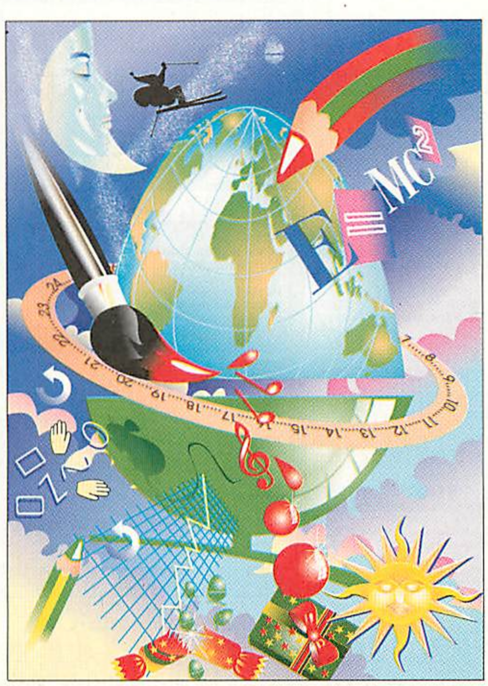
Winning Acorn Christmas card

THE winning entry for Acorn's Christmas card competition will be enjoying the use of her new Risc PC in far warmer weather than we will this winter.

Shirli Hill, from the South African design studio Justin James Design, used a combination of vector graphics and a sprinkling of bitmap graphics to achieve the effects in the excellent and festive image pictured opposite, entitled 'A World of Opportunities'. The results prove how professional the Acorn market is in South Africa, as discussed by Mike Romyn in The Moxon Interview in the Christmas 1994 issue of *Acorn User*.

Not only has the piece been used to grace the front cover of Acorn's 1994 Christmas cards, but a huge 30 foot-high tiled printout of the image will hang in the foyer of Acorn's Cambridge headquarters for the season's duration.

Next month the Picture of the Month competition returns with the grand prize of not a Risc PC but a £20 cheque. Send pictures on disc to the address on the right, and don't forget to explain how you created your masterpiece, and to include your name and address.



New look Picture imminent

DA's Picture, in some ways the fastest and most refined of the bitmap packages on the Acorn range, has finally bowed down to market pressures and gone Acorn compliant.

The revised front-end is more of a complete overhaul than a makeover, which will be good news to many users who found the interface of the original version too Atari-esque for their liking.

Hopefully, the original effectiveness of the package as a photo retouching and creative artistic tool will not suffer from the removal of what CGS Computerbild, the distributors of the program, claimed was the most efficient interface for its program.

Next month we will look in detail at 'the new look' *DA's Picture* and the exciting texture and perspectivisation tools now available.

CGS Computerbild
Tel: 0181-679 7307

The graphics issue

Can you believe that it's here again? In the April 1995 issue the Graphics Special is back, just over a year since the last one in March of 1994. How things have changed in that time with the launch of the Risc PC and all those lovely new graphics packages!

We'll see just how the new hardware and software has been exploited by artists of all ages, and we'll take an in-depth look at how Acorn now stands as a serious graphics platform. But it's not all going to be at the cutting edge of technology, as the focus will also be on how younger and lower-end users can make the most of their machines to great artistic effect.

If you've got any tips, news or any graphics-related titbits, do drop me a line at the address below.

Contacting me

You can contact the Graphics page by writing to me, Jack Kreindler at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: jack@acornusr.demon.co.uk

Showroom open Mon-Sat 10-18.00 hrs (All prices exclude VAT) Carriage included except where indicated

CD-ROM



All the following CD-ROM drives are PhotoCD compatible (multi-session) and include a driver for CDFS =>2.20

Internal Drives

XM-3401B (Caddy)	330kb/s, 200ms	£235
XM-3501B (Caddy)	600kb/s, 135ms	£335

Suitable for RiscPC. SCSI interface not included.

Fantastic Value External SCSI CD-ROM Drives (for all machines)

Panasonic (Tray)	**300kb/s, 300ms**	**£229**
XM-3401B (Caddy)	330kb/s, 200ms	£300
XM-3501B (Caddy)	600kb/s, 135ms	£400

SCSI interface not included. Add extra £25 for A3000.

SCSI cards

Morley uncached SCSI card	£130
Morley cached SCSI card	£170
Cumana SCSI II card	£169

The above cards are suitable for A300, A400, A3000 (Ext), A540, A5000 and RiscPC. For others see MultiPodules. Add £25+VAT to Cumana SCSI II card for external cable.

Hard Discs

A5000/RiscPC 2nd Internal Drive

210Mb IDE	14ms Cache (~1Mb/s)	£149
420Mb IDE	14ms Cache (~1.5Mb/s)	£199
540Mb IDE	12ms Cache (~1.5Mb/s)	£279

The above include all cables, screws and instructions. All the above drives are Connor as used in the RiscPC

A300/A400 Series Internal (IDE)

210Mb	14ms Cache (~1Mb/s)	£229
420Mb	14ms Cache (~1.5Mb/s)	£279
540Mb	12ms Cache (~1.5Mb/s)	£359

The above include all cables, screws and instructions. Add £79 for ext case and/or £25 for A3000 podule case. **All the above drives are Connor as used in the RiscPC**

Syquest Drives

IDE 105Mb	Internal for A5000/RiscPC	£199

(Above Includes one cartridge, cables & driver software)

SCSI 105Mb	External for all Machines	£295

(Above Includes one cartridge, exclude SCSI card)

105Mb Syquest Cartridges	£45

TopicArt

Single disc clipart containing approx. 50 high quality draw format clip art images, each on a single subject. Comes with mono reference sheet. 12 subjects are available now. Please specify when ordering. Site licences are £16+VAT per disc, please ring for further details.



TopicArt9 - Dinosaurs

Subjects avail.
1 - General
2 - Transport
3 - Costumes
4 - Entertainment
5 - Bugs 2 Slugs
6 - Road Signs
7 - Sports Equip
8 - Sports Figures
9 - Dinosaurs
10 - Symbols
11 - Tools
12 - AnimalsGB

£8 + VAT per disc

TopicArt catalogue now available. £1.50 Inc VAT & p+p (cheques only)

Buy 4 TopicArt discs get one free
not incl SpecialArt



TopicArt12 - AnimalsGB



TopicArt4 Entertainment

SpecialArt (Xmas or Signs) £20+VAT (each)

Special editions of TopicArt consisting of a minimum of 4 discs full of clipart





QuickTile v1.02 £25+VAT



Up until now it has only been possible to print posters from Draw & Sprite files. Now with QuickTile you can create posters from ANY RISCOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. RiscPC compatible. **Requires RISCOS 3.10 or later. Return Disc with SAE for upgrade. Upgrade from Tiler for £15+VAT.**

DIY Ink Jet Refills

Single Refills (req an orig cartr.)	£7
Twin Refills (Black only)	£12
125ml / 400ml Cleaning Kit	£4 / £10

Available in Black, Cyan, Magenta, Yellow, Red, Green, Blue, Brown

Please specify colour(s) required when ordering.These do-it-yourself refills can be used with any printer where the head and ink reservoir are combined, ie, DJ-500, BJ10/200. Please do not send empty cartridges. Please note that colour quality may not be 100% from a black cartridge refilled with another colour. We cannot guarantee against dried up empty cartridges and/or blocked nozzles.

QuickSound £10

Load, play, convert & resave Armadeus, Tracker and raw data sound samples. Apply special effects including Reverse, Echo, Max Vol, alter replay rate and resample frequency. Convert samples into modules for use with the RISCOS sound system. Create stand alone Utility mod's.

QuickShow £10

Slide show presentation and video titling package. Create sequences of frames containing text of any colour with drop shadows, outline shadows and rubout boxes using the RISCOS fonts. Sprites can also be included in frames, positioned and resized as necessary. Screens can be linked together with the sequencer with fades in and out.

Mail Order - 0161-474 0778 (All prices exclude VAT) Carriage included except where indicated

All RiscPC's include 1yr on-site maintenance. **Low finance available. The following prices do not apply to finance, ring for details.** We operate Acorn Assist for teachers & academics. **All RiscPC systems are now in stock.**

2MHD210 + AKF60	**£1199**
2MHD210 + AKF85	**£1575**
5MHD210 + AKF60	**£1299**
5MHD210 + AKF85	**£1675**
9MHD420 + AKF60	**£1599**
9MHD420 + AKF85	**£1975**

Add following for Internal SCSI Caddy CD-ROM drive

XM-3401 (330kb/s, 200ms)	**£330**
XM-3501 (600kb/s, 135ms)	**£475**

Above are Toshiba drives and the prices only apply when purchased with a RiscPC system.

RiscPC Upgrades

4Mb Simm RAM	£110
8Mb Simm RAM	£210
16Mb Simm RAM	£375
32Mb Simm RAM	£825
1Mb VRAM (Acorn)	£129
2Mb VRAM (other)	£169
1 to 2Mb VRAM Upgrade (exchange)	£109
486 PC Upgrade (available ~Oct 94)	£99
MS-DOS 6.2 & Windows 3.11	£99
2nd Slice Case Upgrade	£99
Acorn Access for RiscPC	£119
Ethernet Interface Card	£99
Extended 3yr Warranty including OSM	£TBA

A Series Computers A3010 Prices Reduced !

A3010 Action Pack 1Mb RAM	£254
A3010 Learning Curve 2Mb RAM	£339
A3010 Early Years 2Mb RAM	£339
Add £170 to A3010's for AKF52 Monitor.	
A3020 2MFD/AKF52 MultiScan System	£699
A3020 2MHD60/AKF52 MultiScan Sys	£849
A4000 2MHD105/AKF52 MultiScan Sys	£879
Add £55 for AKF50 Monitor (not A3010)	

Software Packs

Early Years	**£42**
Acorn Advance & PCSoft & demos	
Learning Curve Advance & PCSoft	**£42**
Home Office	**£85**
EasiWriter2, DataPower, Pipedream4, PCSoft	
Above are ONLY available with a system.	

Monitors

Acorn AKF52 14" 0.39dp MultiScan	£255
Acorn AKF50 14" 0.28dp MultiScan	£300
Acorn AKF60 14" 0.28dp MultiScan	£320
Acorn AKF85 17" 0.28dp MultiScan	£649

Portable Computers

Pocket Book II (256k)	£227
Pocket Book II (512k)	£275
Psion 3a (512k)	£249
A-Link (requires RiscOS 3.1)	£42
Parallel Link for Pocket B'k or Psion 3/3a	£26
P Book/Psion 3/3a Mains Adaptor	£15
128k RAM SSD	£43
256k Flash SSD	£47
512k Flash SSD	£77
A4 Portable 4MHD60 with PC Emulator	£1599

Hardware Upgrades

486sx25MHz Bare PC Card	£357
486SLC50MHz Bare PC Card	£434
486sx25MHz PC Card 4Mb RAM	£495
486SLC50MHz PC Card 4Mb RAM	£570
For other PC memory see RiscPC RAM	
ARM3 (25MHz, Inc FPA socket)	£129
ColourCard Gold (CC)	£199
Eagle M2 Mulitmedia Card (CC)	£319
Joystick Interface (all m/c's)	£28
Midi Max Card (CC)	£68
Acorn/Logitech Mouse (Acorn)	£25
Movie Magic (CC)	£249
Powerpads (dual) (Gamesware)	£33
Scart - 15pin Monitor/RGBTV cable	£12
Serial Upgrade for A3000 (Acorn)	£19
Stereo Speakers (mains powered)	from £20
Sportster 14k4 Fax/Modem (Inc Cbl)	£149
Sportster 28k8 Fax/Modem (Inc Cbl)	£239
TV Tuner with Teletext (CC)	£157

RAM Upgrades

A3000 1-2Mb	£55
A3000 2-4Mb	£90
A3000 1-4Mb	£129
A3010 1-2Mb	£45
A3010 2-4Mb	£105
A3010 1-4Mb	£145
A3020/A4000 2-4Mb	£89
A5000 2-4Mb	£89
A5000 8Mb	£259
A300-A400 8Mb RAM	£249

Hard Discs/MultiPods

A3010 HCCS Hard Disc Multi-Podule	
40Mb + User Port + 2 Slots	£215
80Mb + User Port + 2 Slots	£225
160Mb + User Port + 2 Slots	£315
A3000 Internal IDE Hardcards	
40Mb + User Port	£175
80Mb + User Port	£185
160Mb + User Port	£275

See also top of page for other hard discs Please call for SCSI Hard Discs.

Scanners/Digitisers

ScanLight Video 256 A5000/RiscPC	£199
ScanLight Video 256 A3000-A4000	£205
Canon IX-4015 Colour SCSI Scanner	£620
Vision24 Colour Digitiser	Int £96/Ext £109
Hi-Vision24 Digitiser A5000	Int £134/Ext £149

RiscOS 3.1 Upgrades

A300/A440 Series (inc carrier board)	£97.88
A400/1, A3000, A540 Series (In stock)	£75.75
Bulk Pack of ten upgrades	£339.00

Please add £4 (Inc VAT) carriage to RiscOS

Printers (Include Cable)

Canon BJ-10sx	£159
Canon BJ-200	£210
Canon BJ-230	£280
Canon BJC-600 Colour	£360
Canon BJC-4000 Colour	£340
HP LaserJet 4L 4ppm (300dpi)	£429
HP LaserJet 4P 4ppm (600dpi)	£639

Add £40 to above printers for TurboDriver

Printer Consumables

BJ-10 Ink Cartridge (BC-01)	£17
BJ-200 Ink Cartridge (BC-02)	£18
BJ-300 Ink Cartridge (BJI-642)	£16
BJ-600 Black Cartridge (BJI-201)	£7
BJ-600 Colour Cartridge (BJI-201)	£8
BJC-4000 Black Cartridge (BCI-21Bk)	£9
BJC-4000 Colour Cartridge (BCI-21C)	£17
BJC-4000 Fast Black Cartridge (BC-20)	£28
BJ-800 Black Cartridge (BJI-643)	£16
BJ-800 Colour Cartridge (BJI-643)	£20
DeskJet500 Mono/Colour Cartridge	£21/£23
EP-L Toner (LBP-4/HP LJIII)	£59
HP 92274A Toner (HP LJ4L)	£59
Swift24 Mono/Colour Ribbon	£7/£15

Books (No VAT)

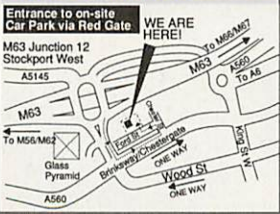
Acorn RISCOS3 PRM's	£99.00
Add £7 (Inc VAT) carriage for PRM's	
Acorn 5th PRM covering RiscOS3.5	£29.00
Acorn BBC Basic VI Guide	£19.95
Acorn AASM Manual	£25.00
ArtWorks Made Easy (Dabs)	£14.95
Begin's Guide to WIMP Prog	£12.95
DTP on the Archimedes (Sigma)	£12.95
First steps in prog RiscOS (Sigma)	£14.95
Game Maker's Manual (Sigma)	£14.95
RiscOS 3 First Steps (Dabs)	£14.95

Add £2 Carr to above (£4 for Acorn books)

Terms

EC residents add 17.5% VAT to all prices except books. Carriage free in UK (excluding remote areas) (except books), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Official orders welcome from educational institutes, chq with order under £30. E&OE.

Where to Find Us



Application Software

Advance (Acorn)	£95
Advantage (Longman)	£46
ArcFax (David Pilling)	£28
ArcTerm7 (Serial Port)	£58
ArtWorks (CC)	£125
AudioWorks (CC)	£45
Chameleon 2 (4Mation)	£33
Complete Animator (IOTA)	£99
Compression (CC)	£34
DataPower (IOTA)	£123
Desktop C v4 (Acorn)	£178
Desktop Thesaurus (Beebug)	£19
Digital Symphony (Oregan)	£38
Eureka v2 (Longman)	£93
FireWorkz (Colton)	£95
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Graphics Loaders (CC)	£42
Hard Disc Companion (Beebug)	£45
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Image Outliner (IOTA)	£46
Impression Publisher (CC)	£125
Impression Publisher Plus (CC)	£289
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MacFS /MacFS Lite (CC)	£47 / £85
Magpie (Longman)	£50
MasterFile III (Beebug)	£45
Morpheus (Oregan)	£28
Night Sky (Clares)	£63
Notate (Longman)	£54
PenDown Plus (Longman)	£67
Personal Accounts (Apricote)	£39
PhotoDesk (SpaceTech)	£157
PhotoTouch (Oregan)	£68
Pin Point Junior (Longman)	£25
Poster (4Mation)	£74
ProArtisan 2 (Clares)	£102
Render Bender v2 (Clares)	£41
Rephorm (Oak)	£47
Resultz (Colton)	£75
Rhapsody (Clares)	v2 £44 / v3 £75
S-Base2 Personal (Longman) **(Offer)**	£99
Serenade (Clares)	£84
ShapeFX (Datastore)	£10
Sleuth (Beebug)	£41
Snippet (4Mation)	£32
SparkFS (Pilling)	£21
Squirrel 2 Database (Dig Ser)	£120
Superior Speech!	£19
Touch Type (IOTA)	£38
TurboDrivers BJ, HP or Epson (CC)	£42 each
Tween (Ace)	£28
TypeStudio (Beebug)	£43
Vector (4Mation)	£75
WordWorks (CC)	£36
Wordz (Colton)	£75

Games Software

Air Supremacy (Superior)	£17
Arcturus (Oregan)	£21
BattleChess (Krisalis)	£22
Birds of War (4D) 2Mb	£24
Black Angel (4D)	£24
Blood Sport (Matt Black)	£12
Break 147 & Superpool (4D)	£24
Cannon Fodder (Krisalis)	£20
Carnage Inc (4D)	£18

Games Software (Contd)

Chaos Engine (Renegade)	£20
Champions (Krisalis)	£22
-Includes Man Utd, J Khan Squash,	
-Wld Class Leaderbrd & Boxing Mngr	
Chocks 2 Compendium (4D)	£24
Chopper Force (4D)	£13
Chuck Rock (Krisalis)	£10
The Crystal Maze (Sherston)	£28
Cyber Chess (4D)	£24
Cygnus Collection	£20
- Incl Twin World, Iron Lord & Tower of Babel	
Diggers (Millenium)	£22
Dune II (Eclipse)	£28
Dungeon (4D) 2Mb	£24
Elite Gold Edition (Hybrid)	£28
Enter the Realm (4D) 2Mb	£13
Fire & Ice (Renegade)	£20
Flashback (US Gold)	£22
Fun School 2/3/4 ea. (5, 5-7, >7)	£17
GODS (Krisalis)	£10
Granny's Garden (4Mation)	£23
Haunted House (4D) 2Mb	£18
Heimdall (Krisalis) 2Mb	£13
Hero Quest (Krisalis)	£22
James Pond (Krisalis)	£10
James Pond 2 RoboCod (G/W)	£20
Krisalis Collection	£22
-Includes, Mad Prof, Pipe'm, Terr'x & Revel'n	
K.V. (High Risc)	£12
Lemmings (Krisalis)	£19
Lemmings for RiscPC (Krisalis)	£22
Lemmings 2 Tribes (Kris) 2Mb	£22
Lotus Turbo Chall 2 (Krisalis)	£19
Magic Pockets (Renegade)	£20
Magnetoids (Oregan)	£22
Noddy's Playtime (J/Bean) 2Mb	£20
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Pandora's Box (4D)	£13
Play it again Sam 1 / 2 / 3	£19 ea.
Populous (Krisalis)	£22
Premier Manger (Gremlin)	£18
Real McCoy 2/3/4 (4D)	£24 ea.
Repton 3 / 4 (Superior)	£19 ea.
Saloon Cars Deluxe (4D)	£24
Scrabble (US Gold)	£22
Sensible Soccer (Renegade)	£20
Sim City (Krisalis)	£26
Sim City 2000 (Krisalis) RiscPC only	£30
Simon the Sorcerer (G/W) 2Mb	£31
Small (Virgo)	£19
Speedball 2 (Krisalis)	£20
Spheres of Chaos (Matt Black)	£19
Starfighter 3000 (Fednet)	£23
Stunt Racer 2000 (4D)	£24
Stunt Racer 2000 Xtra Tracks (4D)	£17
SWIV (Krisalis)	£10
10/10 Software Series (4D)	£18 each
- Early Essentials (<7yr), English (6-16yrs),	
- French (8-16yrs), Junior Essentials (5-11yrs)	
- Maths (Number) (6-16yrs), Maths (Algebra)	
- (6-16yrs), Maths (Statistics) (6-16yrs),	
- Spelling (<9yrs), Driving Test	
10/10 Dinosaurs (all ages)	£10
Time Machine (4D)	£18
Virtual Golf (4D) 2Mb	£24
Virtual Golf Augusta Course (4D)	£13
Wolfenstein 3D (Powerslave)	£23
Xenon 2 (Gamesware)	£19

Desktop Projects Ltd

Tel: 0161-474 0778

Authorised Acorn Dealer, Fax: 0161 474 0781, Email: info@desktopp.demon.co.uk

Unit 2A, Heapriding Business Park, Ford St, **STOCKPORT.** SK3 0BT

Access VISA SWITCH

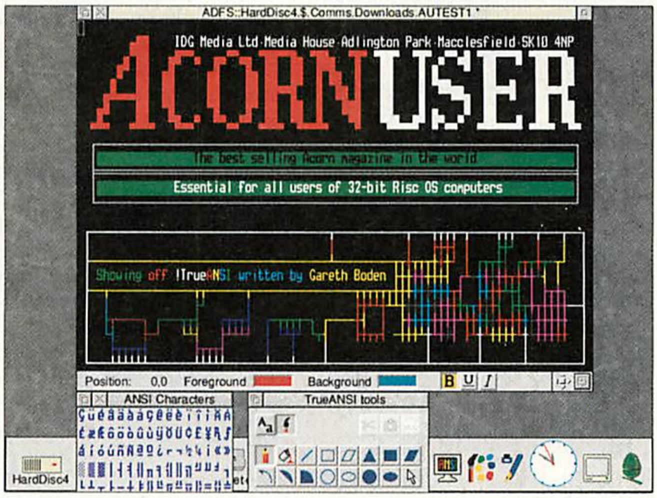
FEB 95

Drawing the line

YOU may think it's odd to be testing a graphics program on the Comms page, but playing with Gareth Boden's *TrueANSI* has been such fun that I thought you should know about it. *TrueANSI* is an ANSI screen editor for generating BBS menus, diagrams, and logos using ANSI graphics that will surely impress your users. Up to now, the best we had was a PC program called *The Draw*, which could only be used in the PC Emulator.

Now here's a native RISC OS desktop application that performs pretty well. There are two modes of operation, text and graphics, but the features overlap; for instance, you can flood fill with a character or with a foreground or background colour, or both. In text mode you enter characters from the keyboard, or from the pop-up ANSI characters window. In graphics mode, operation is much like *Paint*, where you click anywhere on screen with the mouse button to turn on pixels, or use the tools for the various shapes.

Colours are chosen from pop-up selectors on the window edge. If you make a mistake, then there's an undo function key (F8 like in *Edit*) which in operation is rather frightening, as the screen goes black for a second before redrawing your work perfectly but without the last step.



A work of ANSI.

One of the star features of Gareth's program is Intelligent Line Drawing. As you drag the mouse pointer, a line follows it in your chosen style, and as you change direction the correct corner piece appears, and if you meet up with another line at right-angles, the program intelligently inserts an appropriate junction character. This is quite fascinating to watch, almost like playing a light-cycle game!

The program can save its files in various formats including pure ANSI, *ArcBBS* and *Archiboard* formats, and can load text files with ANSI codes, as well as its own internal file format. *TrueANSI* is shareware and I recommend that you register – a snip at only £10 – to receive full support and updates. The unregistered version is downloadable from the DDB, Arcade and The Plasma Sphere BBS: don't miss it!

Graphical RSDFS offers network style

A NEW file transfer system for bulletin boards and small networks is being developed by Chris Claydon of ARMed Forces Software that could revolutionise the way BBS users upload and download files. RSDFS, or Remote Serial Disc Filing System, is a RISC OS Filer-based system that can be run alongside the traditional ANSI graphic and command line method of controlling file transfer via the computer's serial port.

In use, RSDFS makes the host BBS's entire filebase appear simply as a hard disc icon on the desktop of each BBS user's machine, and you can open directory viewers and drag files from these into local Filer windows on your own machine just as easily as copying files from one's own hard disc to a floppy.

The BBS server software allows up to five users to access the disc drives of a bulletin board simultaneously, via a BBS 'door' interface. The system allows for access to be restricted, and the Sysop can monitor activity. The client, or slave software is freely available from the BBS to its users, and takes the place of an existing terminal program.

I have tried out the development system that is running on The Digital Databank BBS, and it looks promising. There is a time penalty while downloading, since transfer is only taking place at the speed of your modem, but the way that the RSDFS system integrates into the normal RISC OS Filer is very neat.

I do feel however, that while this system admirably reduces the need for users to learn another file transfer system, it can de-personalise the way Bulletin Boards work. Using RSDFS, you don't need to read anything, or communicate with anyone during your call.

Most Sysops do not run a BBS just as a source of free software waiting to be plundered, but as a forum for discussion and a meeting place for exchange of ideas, and as a way to make new friends. I want it to stay like that.

Birthday bank

The Digital Databank BBS in Welwyn Garden City has just celebrated its second anniversary of operation, and Sysop John Stonier has given the BBS a birthday present of another phone line, bringing its complement up to three. All lines are 24-hour access at all speeds from 300-14400bps.

The Digital Databank
Tel: (01707) 323531 - 2 lines
(01707) 329306 - 1 line

Shack BBS

Jonathan Brady tells me of a new Acorn system called Shack BBS, run at Birkenhead School on the Wirral, Merseyside. It has free access and is run by pupils and their IT teacher Mr Davies. Shack BBS runs *Archiboard* software on an 8Mb Acorn A310, which also runs applications for the school network, and the modem supports speeds up to 14400bps. Jonathan would like to encourage more people to use it, so give Shack a call: it's on 24 hours a day.

Shack BBS
Tel: 0151-652 3353

Kaz out Steve in

Following the recent election for moderator of the ARCHIMEDES Fido Echo, the incumbent Kaz Dunkley has stepped down and the winner is... Steve Pursey, Sysop of Arctic BBS, that 'other' BBS in London. We thank Kaz for her past efforts and wish the new Moderator well. His job is to ensure that the writers' message subjects stay on topic, which is Acorn's 32-bit technology. Steve has also just added another line to Arctic BBS, presumably so that he can keep closer tabs on the ARCHIMEDES echo!

Arctic BBS
Tel: 0181-903 1308/1309

Contacting me

You can contact the Comms page by writing to me, David Dade at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, Netmail to DaviD Dade FidoNet#2:254/27.0, or mail #2 on Arcade BBS on 0181-654 2212.



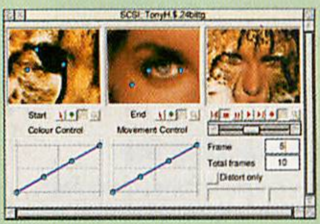
!Rephorm takes two sprites of any size and allows a morph to be generated between them. You simply identify a number of key control points on the start sprite and reposition them to similar places on the end sprite. Rephorm calculates so quickly that the effects of repositioning control points can be seen in real time as you drag them! All calculations are performed in the background so Rephorm never stops the machine from multitasking. The user interface has been widely acclaimed for both its simplicity and its versatility. The morph can be displayed on screen, saved to disc as either an Ace Film or an Acorn Replay file, or individual frames or groups of frames may be saved as sprites.

Since its launch last year, several extra features have been implemented. Chief among these is Object linking and embedding (OLE). Control-double-clicking on any sprite within Rephorm will automatically transfer it into !Paint (or another painting package) for editing. Saving the edited sprite from !Paint will instantly transfer the sprite back into Rephorm, which will then recalculate the effects of the change.

Rephorm has always supported the 16 and 32 bit sprite file formats for the new Risc PC, but a new utility, !UnClear, allows the now obsolete 'ClearFiles' to be converted into sprites for use with Rephorm. Another utility, !Splitter, will split a SpriteFile containing a number of sprites into individual sprites.

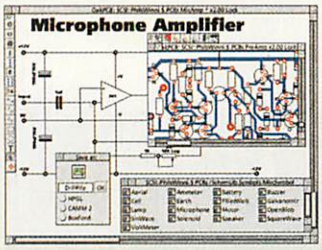
As well as being able to produce morphs and distortions of images, Rephorm can also produce video style special effects such as fades and wipes. These are useful for those people creating and editing Acorn Replay films, providing interesting ways to join two clips together.

Rephorm costs £50
Upgrades to version 1.04 £15



Rephorm

OakPCB II



Having enjoyed considerable success as both a stand alone application, and as part of Design Processor, OakPCB has recently undergone its first major revision to become OakPCB II.

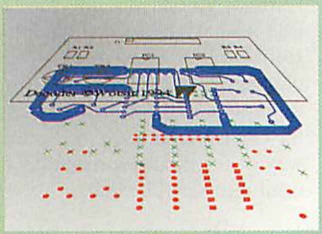
The changes made have been generated as a result of user feedback, and also to take advantage of the improvements which have been made to the operating system since the application was launched under RISC OS 2.

As ever, the user interface to OakPCB is based very closely on !Draw, and users familiar with that package will find no difficulty in getting to grips with the business of creating and editing both schematic diagrams and printed circuit board layouts. OakPCB can handle anything from simple single layer boards all the way up to 4 layer. Comprehensive (and extendable) libraries are provided for both PCB and schematic work.

By default, OakPCB aligns tracks in multiples of 45°, although this feature can now be turned off to allow tracks to be placed at any angle if required. Visual feedback is given whilst in this mode and when editing tracks, so that the tracks change colour when they are aligned at 45° intervals.

A new utility called PCBDrill is supplied which allows circuit boards to be drilled automatically on the Roland CAMM 2 and CAMM 3, and also on Boxford milling machines. Oak PCB II runs on all RISC OS computers including the new Risc PC. It outputs to Plotters and RISC OS printer drivers via Draw Print & Plot (supplied).

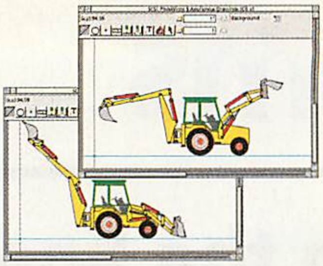
OakPCB II costs £70
Upgrades cost £35



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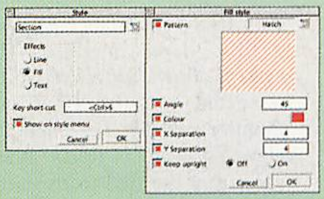
Apollonius PDT is a fully parametric 2D CAD environment. However the user interface differs considerably from conventional wisdom. Normally CAD packages are cluttered with an abundance of methods for drawing each type of object. For example the circle tool will have variants such as Centre/Circumference, Centre/Radius, Radius/Tangent to 2 objects, Three point etc. With Apollonius PDT there is only one Circle tool, but the interface is sufficiently intelligent to know what type of circle you are trying to build by which objects you click on. Indeed the number of options is larger than in most CAD packages.

Other noticeable differences are the apparent lack of short line segments and arc tools. Both of these are instead replaced by an 'intelligent pencil' which allows the draughtsperson to draw round the relevant parts of construction lines in one quick operation.

Being parametric, the package allows the designer to answer 'what if' questions very rapidly. The whole drawing will be recalculated and redrawn as you change the positions or sizes of key objects, or even the geometrical relationships between them, by simply dragging any item around the screen.

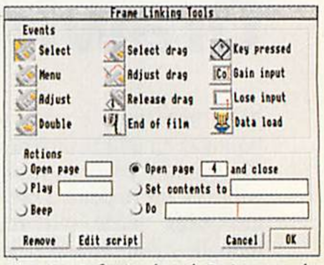
Altogether, Apollonius represents a radical new way of doing CAD. It makes it possible to create clear, flexible, accurate designs, with the minimum of training. The amateur user benefits from the amazing ease of use, while the professional benefits by its unrivalled parametric power.

Apollonius PDT costs £150
Upgrades from WorraCAD and Oak PDT £75



Apollonius PDT

genesis



Genesis Professional and Project are the successors to Genesis II and Genesis Plus and feature greater power, speed, and ease of use. The Genesis menu structure has been simplified by using dialogue boxes to alter the style of frames and pages. Master pages can now be created and added to a library. Application creation and editing has been eased by the introduction of 'Object Linking and Embedding'.

New data types have been incorporated into Genesis, which now supports Artworks, Replay, Windows .BMP and .WAV files. Predefined control buttons can be added to Euclid, Film, Replay and Sound frames. A 24 bit colour model is used throughout and Genesis can handle the new 15 and 24 bit Sprites. The speed at which Genesis pages load has also been increased significantly.

Genesis Professional provides support for Laservision players and for CD. Its powerful Script language has been extended with a host of new keywords and now supports global variables.

Genesis Project is a friendly multimedia authoring system which provides sufficient power to satisfy the everyday needs of most users. Applications authored using Genesis Project are, of course, fully compatible with Genesis Professional so that they can be used as the basis for more complex work. Genesis Project differs from Professional in two significant ways. There is no access to the script programming language, and the overall program structure is simplified with fewer menu options and a reduced range of linking tools. This makes Genesis Project less daunting to the novice user than its big brother, whilst allowing progression to Genesis Professional at a later date.

Upgrades are available from all previous versions of Genesis (including Learning Curve), telephone for details.

Genesis Professional costs £120
Genesis Project costs £50



DTP

Pretty in print

ACORNS have been in use, very successfully, for the past few months putting together a new weekly newspaper for Liverpool, *The Prescot Champion*. It's interesting that it's been kept comparatively quiet until now, but of course I'm not one to criticise Acorn's publicity machine.

The weekly paper is full colour and the 50-or-so pages are delivered to around 113,000 homes. Both editorial and production takes place on a collection of nine Risc PCs.

The editorial team had to be weaned off the Macs that they had used prior to working for *The Prescot Champion*, a process which took a couple of hours for each team member, and none of them have looked back since. The MD of the company responsible for the paper's production, Simon Birtwistle, says he's had no complaints from his team, who are all quite happy using Acorns and are amazed at the improvements that drag and drop editing offers.

They are also frequently amazed at the speed of the machines and just what you can achieve on a fairly small 9Mb system, considering the huge chunks many Mac users require for similar work.

The paste up is done essentially on two machines, with both adverts and editorial being sourced from other machines. The paper is split approximately 50:50 adverts to editorial, and all of it is produced on networked Acorns.



Hold the front page...

Pages are proofed on a Calligraph A3 printer and separations are then sent to the Ps & Qs bureau in Liverpool. As Birtwistle says the bureau has been extremely helpful – at least one refused to take pages from anything other than a Mac – and though there have been problems, the bureau has persevered.

A couple of other A4 lasers and a colour inkjet also produce proofs, with Syquest devices providing backups and files for the bureau. A Nikon Coolscan is used to scan in photos direct from the negatives or slides: 'Our photographer doesn't have to use prints,' says Simon.

A variety of software is used, including the ubiquitous *ArtWorks* and *Publisher*, along with *Eureka* for book keeping. Interestingly, the humble *Draw* is used for most of the adverts.

The cost advantages of using Acorns, while important, weren't the main reason for choosing them. Birtwistle has been using Acorns since the BBC micro, and indeed he used Beebs to drive typesetters for adverts in a previous publishing venture *Merseymart*, Liverpools largest newspaper. Progressing to Arcs was therefore 'completely natural'.

Though Simon has plenty of praise for the machines, he also points out some of their problems. 'We've crashed some of the biggest typesetters in the country, repeatedly,' he says, 'because of problems in the way the Arc sends embedded fonts to them.'

The bureau says it's surprised more people don't use Acorns for publishing. Despite the problems they've had they say 'the machines have got it 95 per cent right, it's that last 5% that lets them down'. The problems the bureau is having are very similar to the problems it had with the Apple when it first ventured into publishing some ten years ago.

Perhaps someone at Acorn could take note. However, it's a definite success story.



Adverts are also produced on the Acorn.

Quicker and quicker

Another incarnation of Computer Concepts' super-fast *TurboDrivers* has recently been launched. The new version, Version 4, is fully compatible with the Acorn Printer Manager and the Risc PC. Anyone who wants to upgrade can do so for £10.

Computer Concepts
Tel: (01442) 63933

What's in a frame?

Several people have spotted a slight problem with frame borders in *Publisher*. The problem involves getting frame borders to mitre properly at the corners.

It's most pronounced when using plain lines since they don't join properly at the corners. This arises from a mismatch between the very general code that handles imported frames and the RIP (raster image process) which turns these lines into dots on the page. It's difficult to solve the problem or predict when it will occur, but tweaking the frame in *Draw* can help in many cases.

Ultimately the best cure is to use a different frame in which it is either less obvious or doesn't occur. So much for high tech solutions, eh.

Small is beautiful?

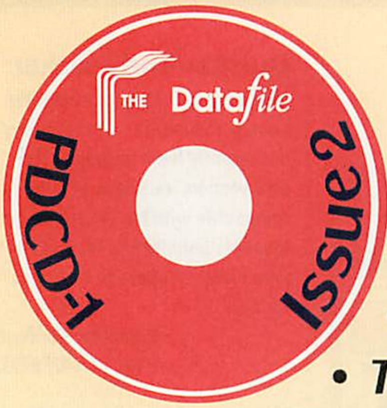
There aren't that many advantages to being in a small marketplace like the Acorn scene – at least, there aren't when it comes to hunting down real bargains – but listen to this.

The rather excellent *Bitfolio* clip art collection from LOOK Systems is an Acorn conversion of the popular cross-platform *Bitfolio* collection. Imagine my horror at finding the PC version listed at *five* times its Acorn price. I can only assume that because of the size of the Acorn market, licensing isn't boosting prices in quite the same way for Acorn users.

Contacting me

You can contact the DTP page by writing to me, Steve Powell at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: steve@acornusr.demon.co.uk

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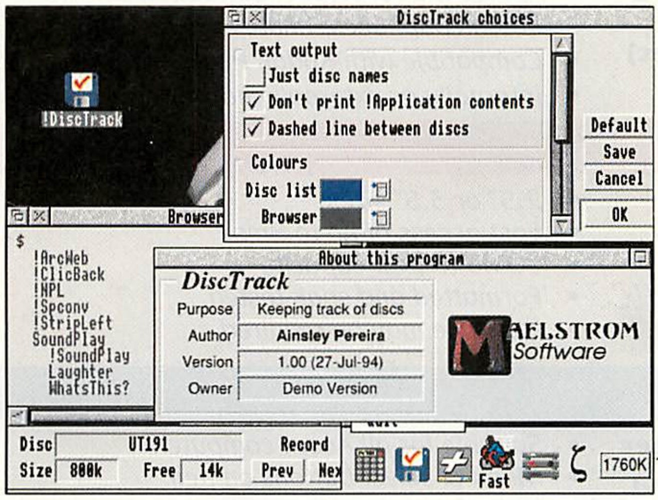
THE PD scene is awash with a whole range of disc catalogue programs which all seem to be a lot of hassle to use. Fortunately, Ainsley Pereira has broken this trend with his new *DiscTrack* program. *DiscTrack* is a standard card-style database that holds the details of your disc collection, enabling good organisation and searches for mislaid files to be made.

Cataloging your discs is as simple as inserting each floppy into your disc drive and clicking select on the *DiscTrack*'s icon. *DiscTrack* automatically records the file details and directory tree and stores the data in a *DiscTrack* file format, which can also be output as raw text. Optional features include a setting that re-names your discs as you record them, to neaten up your collection.

The browse facilities are basic but very straightforward, allowing each disc to be displayed with a full directory tree. An additional list window allows simple searching and editing on disc names.

As I've already mentioned, so many of these programs seem so over complicated that you just can't be bothered to use them. *DiscTrack* has all the features you need and yet lets you get the job done without any messing around.

The real beauty of this program is the ability to scan your hard disc, allowing file searches from memory that are practically instant when compared with a real time scan. If you're keen on keeping an orderly collection of floppy discs, *DiscTrack* comes highly reccomended. The program is shareware and can be obtained for a registration fee of £10 from: Ainsley Pereira, DiscTrack Registration, 'Al Sirat', Chapel Road, Swanmore, Southampton SO32 2QA. A cut-down demonstration version is available on the APDL's latest subscription disc.



***DiscTrack* in operation.**

Shareware: is it really the best way forward for the PD scene?

IN conjunction with my comments on the future of the Public Domain elsewhere in this magazine, I'd like to say a bit more about shareware software. Despite a steady increase in the amount of shareware software available, the relative success of this form of PD has not really come about.

I would argue that the overall standard of PD has improved over the last year, so a move towards shareware as opposed to freeware is warranted. But despite shareware programs featuring among the list of some of the most popular PD titles available, registration returns have not been very high.

Many PD traditionalists would argue that true shareware, by which I mean non-cut-down programs which use only pleas and a loading banner to persuade you to register, are the only real way forward. In an ideal world I would agree: it's great to try a piece of software before you buy. How many commercial packages would you have thrown away after some trial use if you hadn't just forked out wads of dosh for them? The only snag with all this is that most people just don't bother to register.

As much as I hate to admit it, this leaves the only choice of cutting down shareware programs to produce freeware demonstrations, with the authors providing the full program on registration. Of course this doesn't really encourage the user to spend his cash unless they really love the demo in the first place. It's a *Catch 22* situation that currently divides shareware authors.

In theory, shareware is such a great idea, but without a change of attitude from the users it will only ever be quoted in optimisic predictions. If you have any views on shareware as an author or user, please get in touch at the usual address.

APDL CD

Hot on the heels of The Datafile's latest CD release (see review on page 73) comes a new collection of CD-based public domain material from the APDL. Instead of being a general 'half a library on a disc' release, the new CD is filled entirely with clip art. Most of the graphics are in *Draw* and sprite format with about fifty megs of *ArtWorks* files. The disc is a bargain for only £28, with money-back price reductions for anyone who has already bought some of the clip art on floppy disc.

Zap udpate

Regular readers of this column will know that I swear by Dominic Symes' file editor, which has just reached version 1.2. Current *Zap* users should get hold of this new version which contains many new features and updates, from the user-definable menu structure to the re-written (and much faster) search facilities. Anyone who has not yet heard of this most useful program should obtain a copy now, and consign *Edit* to its portion of ROM for ever. *Zap* is on disc UT74 from The Datafile.

DoodlePad

A range of somewhat unusual but potentially handy programs can be found on the APDL December '94 subs disc, the most interesting of which is The Flying Pig's *DoodlePad* program. *DoodlePad* takes over the RISC OS 3 backdrop and provides you with a handy sketch and message pad. Holding down Select over the backdrop makes the pointer act as a pen, with the Adjust key working as a rubber. When you quit the program, it saves your scribbles to disc and reloads them next time you re-start the program, making it ideal for inclusion in your boot-up sequence.

Contacting me

You can contact the Public Domain page by writing to me, Paul Wheatley at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: quantum@digibank.demon.co.uk or on-line on the Arcade BBS.

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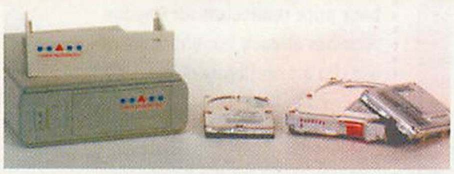
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Disc help and support for Fireworkz users

PIPELINE and *ZLine* are two subscription magazine discs for *Pipedream* and *Fireworkz* users. For a fully inclusive annual sum of £18, you will receive quarterly a disc containing hints and tips about not only *Pipedream* or *Fireworkz*, but also about RISC OS.

Whether they are of any real value to businesses is debatable. But, what they do provide is an interesting toy for when you're bored.

Readers are encouraged to contribute to the disc and, if anything of theirs is published, they get the cost of the disc refunded.

ILine started in January, which is a disc for *Impression Style* and *Publisher* users.

This summer will see *FireLine* being released. This will cater for Windows users of *Fireworkz* and *Fireworkz Pro*.

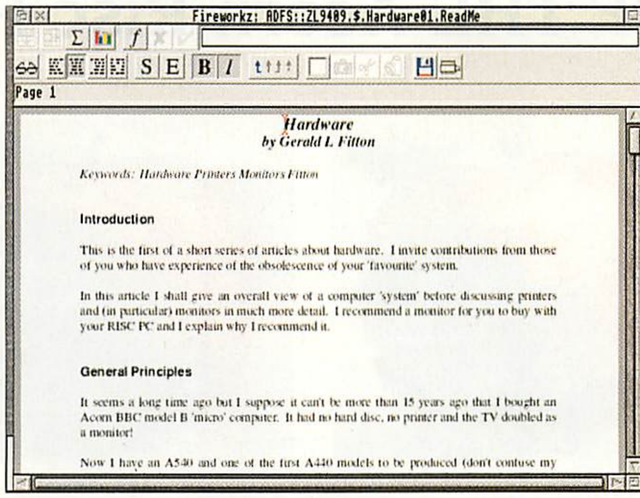
For four discs a year £18 might sound a little on the expensive side, but they do provide hours of interest on your computer.

My only reservation about these discs is that I feel they spend too much time talking about RISC OS and other programs rather than just sticking with the program they are supposed to be for.

That said, all the 'articles' are in the format of the program they support (i.e. all the files on the *ZLine* disc are produced in *Fireworkz*, and those on *ILine* in *Impression*).

As I've said, they do provide hours of entertainment and will appeal to all who are interested in Acorn computers as well as the packages they refer to.

Abacus Training
Tel/Fax: 01793 723347



A snippet from *ZLine*, the disc-based magazine for users of *Fireworkz*. If, like me, you think the *Fireworkz* button bar looks a little tacky, you'll be pleased that the brochure for *Fireworkz Pro* shows it in the same style as the PC version of *Fireworkz*. So now the sole reason for buying a PC card has gone (well, almost).

Power PC or Risc PC: the business machines of the future?

THE buzz-word of this decade is RISC. Apple finally decided to use RISC processors last year and their advertising department 'forgot' that Power Macs weren't the first cheap RISC machines around.

But Power Macs are only half the story. IBM, Motorola and Apple are now designing something much, much more important: the replacement for IBM-compatible PCs. Please note that Microsoft is excluded from the three companies. IBM made the mistake of using, non-exclusively, an operating system from Microsoft. And it's suffered ever since.

Before you laugh at 'the replacement' it *will* succeed and overthrow present PCs simply because it will be the industry standard – it'll run everything. That is, it'll run everything except RISC OS, the world's best operating system (in my humble opinion). So all your Windows, Macintosh and OS/2 programs will run, and they'll run faster with the 'super-fast' Power PC processor than with Intel chips.

So where does Acorn come into this? If, and I mean *if*, Acorn breaks its rule and actually advertises on television it could seriously get into business computing. In a couple of years time everyone will be confused about what to buy. This means that if Acorn promotes its products, people will have an open mind and, hopefully, choose them.

I foresee that Intel will go bankrupt within the next ten years unless it dumps CISC and takes on RISC. It's trying to cover up the fact that its processors are over-engineered and prehistoric by a sexy and expensive advertising campaign. Did you know that you can fly to Paris with an Intel Pentium processor fitted inside your PC? Intel thinks you can.

Fireworkz line spacing

When I first got hold of a copy of Colton's *Fireworkz* it took me some time to work out how to have 0cm space before a paragraph without the top and bottom of the text being chopped off. This is because *Fireworkz*, by default, reserves a space at the top and bottom of cells for a grid. To overcome this set the grid size to zero in the paper dialogue box (this is located in the Page menu).

Apricote Support

After my comment on paying for user-support in the December issue, Apricote Studios would like to point out that it offers unlimited free telephone support to all users during office hours. In addition, all their minor upgrades are also free. However, this does not apply if the upgrade includes new manuals and a case.

Apricote Studios
Tel/Fax: (01354) 680432

Picture thanks

I'd like to thank Paul Johnson, who is part of the product support service for *Enterprise Accounts*. He's responsible for the futuristic screenshot of *Enterprise* in the article starting on page 37.

Sensorium accounts

We were going to review Sensorium's new budget accounting package this month (see page 49 for a look at accounting software), but unfortunately it was not ready in time. All that I can tell you is that it multi-tasks, is a full double-entry book-keeping package and will retail at £99 + VAT. It won't have features like payroll, but what do you expect for £99?

Sensorium Ltd
Tel: (01274) 820722

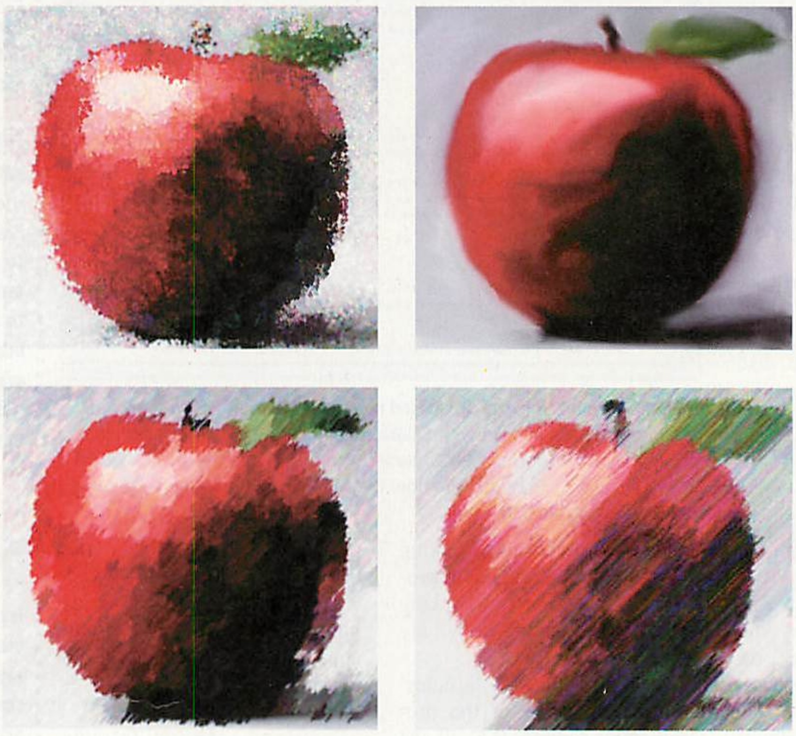
Contacting me

I'm always interested in companies which use Acorns. You can contact the Business page with all tips and opinions by writing to me, Alex Singleton at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: alex@acornusr.demon.co.uk

PRO ARTISAN

24

UNLEASH THE ARTISTIC POTENTIAL OF THE Acorn Risc PC



ProArtisan 24 is the latest development in the hugely successful Artisan series. Designed specifically for the Acorn Risc PC, ProArtisan 24 exploits the enormous artistic potential offered by allowing the use of 16.7 million colours for image creation and display.

This means that the computerised tools provided, such as chalk, water colours and pastels, mimic their natural counterparts very closely. Add to this ability to load Photo CD images in full 24 Bit colour and what you have is an exceptional painting package for your Risc PC, with the added benefits of many powerful image processing tools.

Acorn RISC PC

A fact pack is available which includes a demo version of the software.

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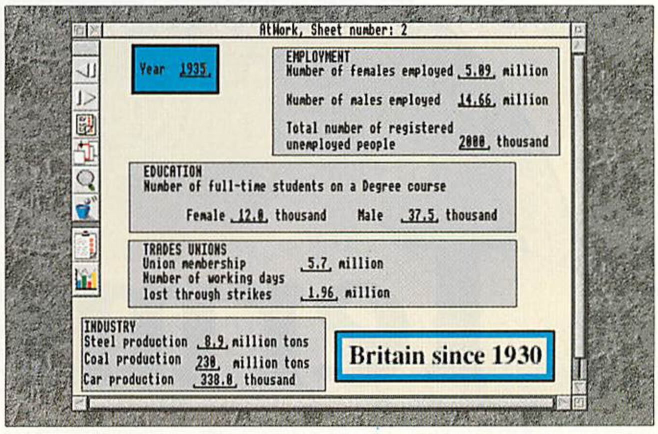
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Education

Ready-made datafiles



Ready made datafiles with a wealth of information in *Pinpoint*.

FOR as long as I can remember, teachers have been asking for ready-made datafiles. In most cases, datafiles had to be produced by the teachers themselves, usually by getting hold of an old electoral register and copying the details about people who, in most cases, were pushing up daisies long ago. Now datafiles are coming thick and fast from two leading suppliers in particular: Longman Logotron and Anglia TV. Designed to meet specific areas of the NC, these are much more than just datafiles. They are complete resource packs into which has been invested a considerable amount of time and effort, yet they are very reasonably priced.

Anglia's latest are for use with its *Key* series (*KeyPlus*, *KeyCalc* and so on). Following in the tracks of *Lenses and Light* and *The Civil War*, Anglia has just released *In Ancient Egyptian Times* and *Ladakh*, the latter being a study of life in a Tibetan community. The packs come with a disc and an A4 book. Each double page spread explains one topic with teachers' notes on the left and a student worksheet on the right. The worksheet is well presented and gives some useful exercises with the datafile.

Longman Logotron's packs are for its *Pinpoint* and *Junior Pinpoint* programs and once again, the datafiles include a very carefully and thoughtfully produced book containing some exercises. The latest packs were created to support the Landmarks series broadcast by the BBC. *The British Monarchs* and *Britain Since the 1930s* are the first, with *Ancient Civilisations* and *Weather and Climate* to follow later in the year. The book contains both notes for using *Pinpoint* and activity sheets for using the datafile. Datafile packs are £12 each.

Longman Logotron
Tel: (01223) 425558
Anglia TV
Tel: (01603) 615151 x2445

A huff and a puff and Information Technology

SO the new National Curriculum Orders have now arrived. I was mildly amused to find the statement 'Pupils should be given opportunities where appropriate, to develop and apply their IT capability in their study of <subject>' which appeared in all the orders except PE. Does this mean that PE cannot take advatage of Information Technology other than to use the computers as an obstacle course? Surely some mistake...

Using IT for the sake of it is not to be recommended, but only recently our Head of PE came to me with a request to use the IT rooms. His plan was to get the students to take their temperatures and pulse rate and then go off for a run for a couple of miles. When the students returned huffing and puffing, they took their temperatures and pulse rates every five minutes and recorded them.

Still huffing and puffing they came to the IT rooms where they entered their work in a graphing program. The resulting graphs of their recovery rate were compared to others in the group and they then attempted to draw some conclusions from their findings.

Several Information Technology attainment targets were met, as were several from PE and doubtless other subjects too. Is this not what Information Technology should be about?

So why CD on the PC?

I GUESS this is going to be preaching to the converted and is never going to be read by its intended audience, but here goes anyway.

Acorn claims to be the largest supplier of computers to education: nine out of ten schools in this country use Acorn equipment, according to the company's Education Business Unit.

There are more Acorns in schools than any other computer, we are told, so why do I receive so many press releases about CDs specifically aimed at education (even to the point of listing key stages and attainment targets fulfilled by the products) which will only run on a PC. Am I missing something?

Top shop

I recently went into the new Hemel Hempstead branch of Calculus (the multimedia store) and was pleased to see an A3010 computer in a prominent position, together with a small selection of software. Pretending to be computer illiterate, I engaged a salesman in a conversation about it. Most of what I was told was accurate and, most important, he didn't try to steer me away from the Acorn towards another computer.

He did insist on referring to a floppy disc as a hard disc (presumably because the case of a 3.5in floppy disc isn't floppy) and tried to kid me that all PC programs would run via the DOS emulator. Rather more disturbing was that he implied that the computer was £100 cheaper than anywhere else, which is not the case.

Overall I'd give him 6/10; a much better performance than Dixons where I was told not to bother with this toy (0/10) and Rumbelows where the poor old A3010 was languishing on the bottom covered in dust. An assistant came and asked me if I needed help but she didn't know anything about computers. I asked her if she would find somebody who did know something, but she didn't seem to know of anybody she could ask (1/10).

Welsh Arc

There is a large Acorn following in Wales and for those who wish to work in Welsh, MEU Cymru has some useful, if not essential software. *Illuminated Celtic Capitals* featuring fish and fowl and *Celtic Patterns* will ease the producion of timeless designs with a Celtic flavour. To be truly authentic, you'll need the set of *Welsh Fonts* that include accents on the Welsh vowels *y* and *w*.

MEU Cymru
Tel: (01443) 841790/1

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: gpreston@arcade.demon.co.uk

DoggySoft

Your gateway to the world of communications

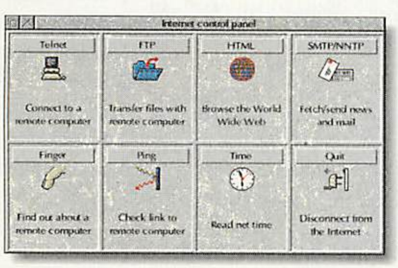


Termite

Whether you are a seasoned comms addict, or a bewildered technophobe, you'll find Termite the easiest way to get onto the information superhighway. Termite is the ultimate in terminal software, featuring all you need to access bulletin boards around the world — including many features until now unknown on Acorn computers. Termite is flexible, extendable, and comprehensive (it even includes a full-featured off-line mail reader package), and above all is very easy to use.

Termite Internet also includes all the software you need to connect to the world's fastest growing network: the Internet. Termite Internet does away with the arcane commands, and makes the Internet accessible to everyone, through an intuitive graphical interface.

Termite and Termite Internet are available in great value deals including modems and subscriptions to the UK Internet provider Demon Internet Services. You can simply plug-in and play! Please complete the coupon below for more details.



Prices:

Termite	*£49.95*
With fast 14,400 baud US Robotics Sportster modem	*£189.95*
Termite Internet	*£79.95*
With fast 14,400 baud US Robotics Sportster modem	*£219.95*

Termite is upgradable to Termite Internet for no more than the price difference.
Postage & packaging: £2 for software, £5 for hardware.

○ Please send further information about Termite, internet subscriptions, and software/hardware bundles. I enclose a stamp.

○ Please send a copy of Termite

○ Please send a copy of Termite Internet

○ With Sportster 14k4 modem

Price ☐ No VAT required. Remember to add p&p.

○ I enclose a cheque/PO to 'DoggySoft'.

Name

Address

Tel.

○ Please charge my credit card, brand

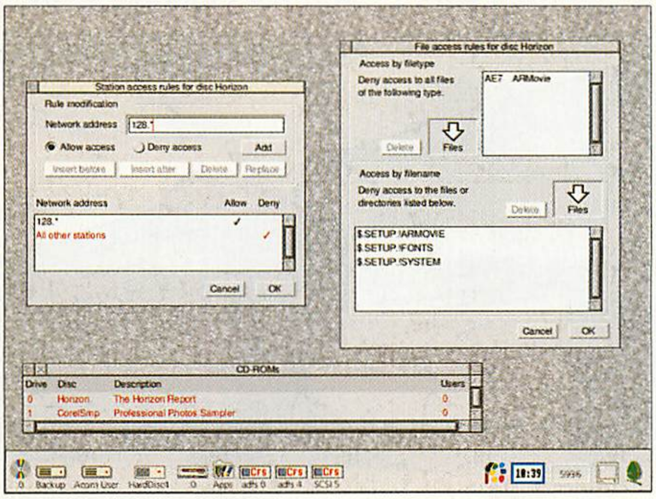
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United Kingdom
Tel.: (01494) 673222
Fax: (01494) 675878
Data: (01494) 681711
Telex: 83675 Brit G
sales@doggysft.demon.co.uk

Faster network CD-ROMs

Version 2 of *CD-Net* by Cumana was launched at the BETT show, and registered users will receive a free upgrade in line with Cumana's upgrade policy. *CD-Net* enables CD-ROMs to be exported over a network and version 2 offers several additional features as well as some changes. The most obvious change is that the key files have now been dropped so that any disc can be exported without the need for installing software patches to enable individual CD-ROMs to work.

The enhancements make what is already a very fast program even faster. Additional options include preventing selected filetypes from being exported, which is particularly useful as large video clips like Replay files, which will slow down the system, can be prevented from being accessed from any or all on-line discs. Different discs can also be given different primary and secondary caches.



Some of the dialogue boxes from the new version of *CD-Net*.

Probably the biggest change is to the Ethernet drivers which have been re-written, and this alone makes a significant difference to the speed of *CD-Net*. Access to PC discs is now also supported, as is access to remote CD-ROMs via Internet.

Cumana
Tel: (01483) 503121

Tip of the month

Change your password regularly. The easiest way to achieve this is to press F12 and enter:

```
PASS
```

then Return. Enter your current password and press Return. Then enter your new password and press Return again. WARNING! Be very careful to type your new password correctly. If you mis-type you'll have great difficulty getting back into your area.

Alternatively, ask your network manager to provide you with a copy of *NetPass* which is part of the *Supervisor* suite by The Advisory Unit. The rules for passwords vary depending on how your network manager has configured the system, but to cover all possibilities, the password should be at least six characters long, must not begin with a number and may not contain spaces or punctuation.

Nucleus server

Digital Services showed off its new fileserver software at the BETT show in January. Intended as a replacement for *Level 4*, *Nucleus* aims to overcome two limiting features. First it eliminates the need for *Scrap* to be present in each user directory and secondly improves transfer speed using multi-threading algorithms which stand up better under heavy loads. The package includes a network management program which can load the password/user profile file from *Level 4*, so enabling the manager to retain the existing user base.

Extensions to the basic server software include the facility to export CD-ROMs. There are five price bands reflecting the number of users ranging from £199 for up to 10 users, £749 for up to 100 and £1299 for 100-plus.

Digital Services
Tel: (01705) 210600

E-mail at last

After a long wait, there is at last an e-mail application for Acorn Ethernet Networks.

Not only will it cope with internal e-mail, but can link onto the Internet allowing access to the outside world and beyond. This will enable users of networks to communicate with users all over the world without having to resort to the rather convoluted method of using Public Domain programs, or bulletin boards with access to the Internet.

Thoughtfully, Acorn has provided the opportunity for network managers to vet outgoing mail, a feature which I feel is a minimum requirement for schools. With all the debate about the introduction of the Internet into schools, it's important that pupils don't get carried away with Internet access and e-mail, to the detriment of other IT work.

Acorn Computers
Tel: (01223) 254254

The Network page

Welcome to the Network Page. This new bi-monthly column will cover items which will be of interest to network users and network managers alike. I'll be calling on software developers to give their views as well as information about new or improved network software and hardware.

Network Solutions

Gary Stevenson, author of *Level 4* and formerly of Oak Solutions, has formed his own company, Network Solutions. All previous network enquiries to Oak Solutions should now be made to Network Solutions. Gary is concentrating on hardware installation but will also be developing some network software. Best of luck Gary, and watch this space!

Network Solutions
Tel: (01954) 212083

Econet to Ethernet

Many network programs designed to run on Econet could not easily be converted to Ethernet. One of the most recent releases has been *SuperMon* by XOB. Not so much a conversion as much as a complete re-write, this software is essential for the network manager. A full review will follow.

XOB
Tel: (01307) 840364

TurboSpooler

Computer Concepts' long-awaited spooler printer driver for use with its Laser Direct and Turbo Driver systems is now ready. I tried the spooler for the Turbo Drivers way back in September and that seems to be working very well. The Laser Direct part has been giving one or two problems during development, but this too is now up and running and is, I must say, worth the wait.

Computer Concepts
Tel: (01442) 63933

Contacting me

You can contact the Networks page by writing to me, Geoff Preston at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: gpreston@arcade.demon.co.uk

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It's a day out for the whole family – 'hands-on' opportunities for you to try out all the latest products in the PC market: Seminars, Presentations and Demonstrations throughout the day for both the home and business user (SOHO). There are exciting new games products and leisure software for the young-at-heart and, for the first time, a special new Early Learning area for the children. Our technical and sales support team will be there to assist and advise you on the best products for all your computing needs and representatives from a host of leading computer companies will be on hand to answer your questions. Try it and then buy it – for the young and old (and those in between) – it's fun, it's educational and it's FREE.

For business users, demonstrations will take place throughout the day for: Word-processing, Spreadsheet, Accounts & Payroll softwares, and Aries Office Computer Systems will be available for hands-on evaluation.

Do not miss the unique opportuntiy to see the Aries PC based document processing system in action.

Some of the products on show and available for purchase ◆ Printers ◆ Plotters ◆ Aries Notebooks ◆ Aries PC's ◆ Scanners ◆ Software ◆ Monitors ◆ MultiMedia ◆ Mice ◆ Books ◆ Education Products ◆ Psion ◆ Networks

Watford Electronics Ltd

Jessa House, Finway (off Dallow Road), Luton. LU1 1TR. Tel: (0582) 487777

Direction to Jessa House, Luton, from the M1 Motorway:
Exit off junction 11 of the M1. If coming from the South, turn right at the roundabout (under the motorway) or from the North, turn immediate left. At the first roundabout turn right. Pass "DO-IT-ALL" on your left . Over a bridge, across another roundabout. You are now in Dallow Road. After half a mile, you pass BESTWAYS on your left. Finway is the first turning on the left.

E&OE Subject to change.

Font directory demonstration

LOOKSystems

THIS is a demonstration version of LOOKSystems' font management system for both RISC OS 2 and RISC OS 3. This version has all the features of the full package, but has a time limit on usage. Before April 1995 the *FontDir* application can only be used for 20 minutes at a time – after that time, usage is limited to one minute.

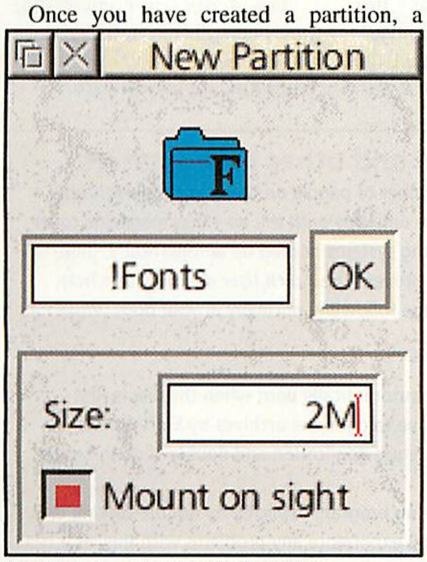
The *Font Directory* package consists of two programs: *FontDir* and *FontMgr*. Fonts are installed in partitions by *FontMgr* and are controlled by *FontDir*.

Installing fonts

The first thing that must be done is to create a font partition. This is a file on disc where your fonts will be stored, similar to the archives in which programs are stored on the cover disc. The partition can be on any filing system – ADFS, SCSI, IDE, or *ArcFS*, *CFS* or *SparkFS* compressed files – though to be most useful it should probably be on a hard disc, and certainly not a volatile filing system like the RAM disc.

The partition is created by the *FontMgr* application. When you run *FontMgr*, an icon is placed on the left side of the icon bar – along with the floppy disc and other filing system icons. Clicking with the Menu button on this icon will bring up a menu; choose 'New partition' from the 'Partition' submenu. This will open a dialogue box into which you can enter the size and name of the font partition that you wish to create. You can change the size later, so for the moment you can guess at it – say 800K. Once you have done this, drag the font folder icon to the directory window where you want to create the partition, often the root directory of your hard disc.

Once you have created a partition, a window will open showing the currently installed fonts on your system. These are not yet installed in the partition; they are available from Acorn's font manager which comes with RISC OS. Fonts from this list can be selected by clicking with Adjust, and whole groups can be selected by clicking on the directory icon at the top of the font list. Once you have selected the fonts to install – probably all of them – you should enter a directory name in the second window and click on 'Go' to install the fonts. The directory name is arbitrary, but must be supplied as no fonts can be installed in the root directory of the partition. As you build up your collection of fonts, you may decide to group them into directories called *Acorn*, *EFF*, *Datafile* and *FontCo* or possibly *SansSerif*, *Script* and so on.



Creating a new partition in *FontMgr*.

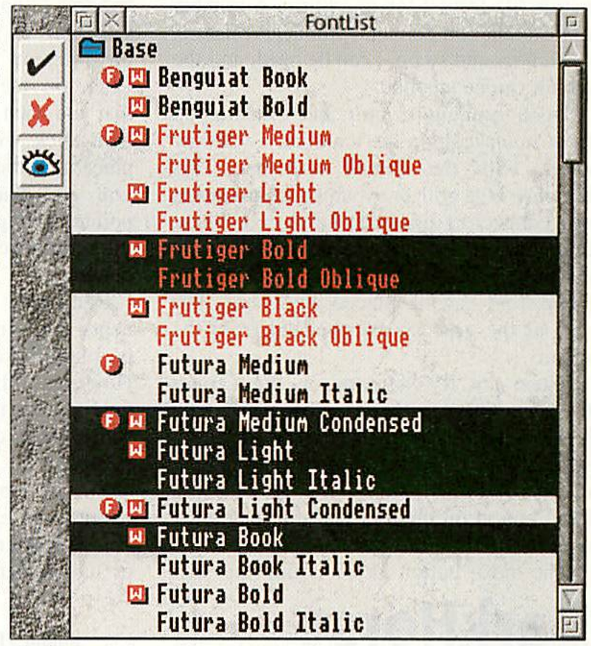
To add more fonts to an existing partition, choose 'Install fonts' from the 'Partition' submenu, then proceed as just described. Alternatively, by clicking with Select on the *FontMgr* icon on the icon bar you will open a Filer-style window showing the directories in the partition. Font families can be copied to and from one of these directories in the usual way, and new directories created.

The 'Partition size' entry on the 'Partition' submenu allows you to alter the size of the font partition, which may become necessary as you install more fonts. You can also dismount, compact and find the free space in partitions from the icon bar menu.

Whenever you have altered a partition you will need to re-compile the font tables from the 'Compile tables' entry on the 'Partition' submenu. However, if you try to quit *FontMgr* without re-compiling the font tables, it will warn you and give you a chance to compile them. You should always quit *FontMgr* when you have finished with it, as the fonts in the partition cannot be accessed while it it running.

Using FontDir

Once you have a font partition on your hard disc, which fonts are available can be controlled by *FontDir*. Again, this appears on the left side of the icon bar, and clicking with Select will open a window containing all the fonts in the partition. These can be selected as individual fonts, weights, families or entire directories. A range of fonts may be selected by dragging with the mouse. A selected list of fonts can be installed with the tick icon or uninstalled with the cross icon. Installed fonts are usually displayed in red.



The font window of *FontDir*, allowing you to select fonts in individual weights and families.

A particular font can be displayed by using the eye icon and then clicking on a font in the font list. A document can be scanned for fonts used within by dragging it to the *FontDir* icon on the icon bar. This works with most file formats, and will cause *FontDir* to install the relevant fonts. Shift-dragging will select the fonts but not install them and Ctrl-dragging will uninstall any other fonts.

The full version of *Font Directory* is available for £35 inc VAT. However, until the end of March 1995, *Acorn User* readers can buy it for just £20 by using this voucher (or a photocopy).

FontDir voucher

This voucher entitles you to £15 off the RRP of *FontDir* from LOOKSystems.

Only one voucher can be redeemed per order, and vouchers cannot be used in conjunction with any other offer, promotion or discount. Vouchers can only be redeemed directly from LOOKSystems before April 1995.

LOOKSystems
Address: 47 Goodhale Road, Bowthorpe, Norwich NR5 9AY
Tel: (01603) 748253

Circuit

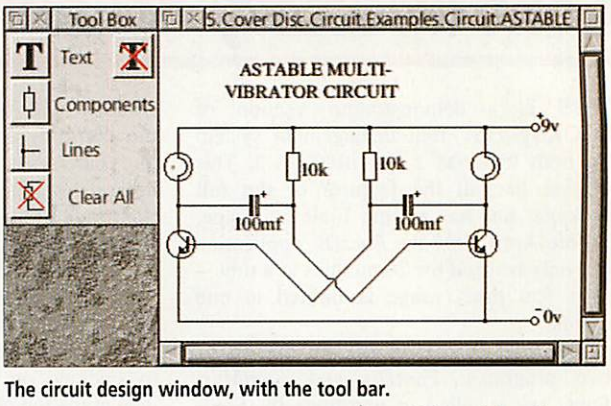
Julian Robbins

CIRCUIT is a program for designing circuit diagrams. These can then be exported as *Draw* files for printing or in a native file format for re-editing. A number of different components – diodes, resistors, capacitors and so on – can be used, and the circuit can be labelled.

Upon running *Circuit* and clicking on the *Circuit* icon on the icon bar, a window opens with the *Circuit* tool bar. This window is a grid onto which components and connecting lines can be placed. These both snap to the grid, so only need to be placed roughly in the correct place on the page. Text can be placed anywhere. The size of the grid can be changed from the menu.

There are five buttons on the *Circuit* tool bar. The top two are concerned with text entry. Clicking on the left hand button will allow you to enter text into the diagram. To delete text, click on the right hand button on the tool bar and then click over the text with Adjust.

The next button down from the text buttons is the component entry button. Clicking on this button will open a window containing a selection of components in different orientations. Click on the component that you want to place and then click with Select to place it on the grid. While you are placing it, the pointer changes shape to the component you are placing.



The circuit design window, with the tool bar.

Remember that components snap onto the grid, and so may not be placed exactly where the pointer was. However, this does mean that you need only position components and lines into roughly the correct place, and they snap into place.

The next button down places lines and operates in exactly the same way as the component entry button. To remove lines or components, click over them with Adjust – you can be editing either lines or components at the time.

The entire grid can be cleared using the bottom button on the tool bar. This clears text as well as components.

Three ready-made circuits are provided on the disc along with *Circuit*. These can be found in the *Examples* directory on the disc in the same archive as *Circuit*, and are in both *Draw* and *Circuit* file format.

DarkHorse

Kuldip S Pardesi

DARKHORSE is one of those nifty programs which puts up interesting pictures on your screen if you leave it alone for long enough. Originally, this was designed to prevent burn-in on monitors, but these days it is more a matter of having something pretty on the screen to look at while you try to recover from writer's block.



When run, *DarkHorse* installs itself on the left of the icon bar. Clicking on the icon bar icon will open a window from which you can configure *DarkHorse* with your choice of screen saver and timeout.

DarkHorse is a Shareware program, which means that if you wish to use it regularly, you must register. Registration costs £9, and cheques or postal orders should be sent to Kuldip S Pardesi, 50 Selborne Road, Ilford, Essex IG1 3AJ. Not only does registration get you a copy of *DarkHorse* which you can legitimately run on your computer, but it also gets you the full version of the program.

With the unregistered version – on the disc – any extra screen savers which you add will only work once, whereas they can be added permanently in the full version. Three sample files are on the disc.

Disc problems?

OUR cover discs are tested thoroughly at every stage of production, but one or two faulty discs may slip through. If you suspect that you have a faulty disc, check whether it verifies by choosing 'Verify' from the menu produced from the floppy disc icon on the icon bar.

If the disc does *not* verify, then it is physically faulty and should be returned to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH, who will replace the disc free of charge. Note that this address has changed recently.

If it does verify, contact the editorial office at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or telephone (01625) 878888.

While we do test all the programs on the cover disc, we are unable to try them on all possible combinations of computer, hardware and software. We try to support RISC OS 2, but much of the software written for the disc does require RISC OS 3.1 or above, as software writers are switching to the new operating system. Do let us know of any problems.

The *Acorn User* cover disc has been checked for viruses using *Killer* version 1.900 from Pineapple Software.

Article tie-ins

Various authors

AS usual, several of the archives on the disc contain programs or files which tie in with articles in the magazine:

• The *C* archive contains a program to accompany the C for yourself tutorial.

• The *DiscTrack* program is featured on the PD column. The version on the disc is the Freeware demo version and not the full version which can be obtained from Ainsley Pereira, 'Al Sirat', Chapel Road, Swanmore, Southampton SO32 2QA for £10.

• The *QandA* and *FAQ* files are described in Questions and Answers.

• *GameBase* accompanies the *GameOn!* review.

• The *DTPAids* archive contains two helpful programs described in the article on using *Impression* for magazine design and production.

• *StarInfo* is, as ever, *INFO. 'Nuff said.

Note for techies and other menu-haters

At the suggestion of a number of people on the usenet newsgroup comp.sys.acorn, who were unhappy with the way that magazine cover disc menus and de-archiving systems booted up automatically, there is now a system variable to prevent the *Acorn User* menu system from auto-booting. If you use the following, normally in your boot sequence:

```
Set Magazine$Disc -noboot
```

the menu system will not automatically boot when the disc is first accessed. You will then have to open the archives by Shift-double-clicking on the relevant pseudo-application and double-clicking on the archive file itself.

You can still run the menu program explicitly by double-clicking on it. Please let us know if you experience any problems with this, as it has not been possible to test it on all machine variations.

Z

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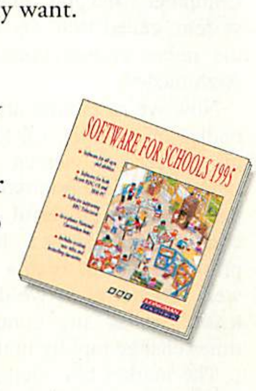
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Future perfect?

WALTER BRIGGS

As we move into the second half of this decade, the Acorn market is in an interesting position. Will it continue to thrive as a niche-based affair, or will Acorn go the same way as Atari and Commodore and become a victim of its own technological innovation? *Acorn User*'s experts have polished off their crystal balls for a look into the future of Acorn and its machines, and it makes interesting reading...

However you look at it, the Acorn market has come a long way in the last few years. Looking back at the start of this decade, *Acorn User* was running stories on Acorn's new R140 UNIX workstation, a forthcoming fax card from Computer Concepts, and a new operating system, called RISC OS, to replace Arthur, the rather embarrassing first OS for the Archimedes.

Now we're talking about Risc PCs with oodles of memory, CD-ROM drives, multiple processors, screen sizes and colour ranges that were impossible five years ago, and software powerful enough to enable complete magazines to be constructed and printed. It seems such a long time ago we were wondering if we'd ever fill 4Mb of RAM, but as any computer fan knows, times change rapidly in this game.

The market has changed, too. The education sector, which has always been Acorn's main money spinner, has been radically altered, with schools becoming responsible for their purchases, rather than local authorities. This has, in turn, posed new challenges for Acorn's marketing team – a job that has been likened to selling meat pies at a vegetarian conference – and has resulted in a number of interesting trends, such as a number of companies converting software for the lucrative PC market, and the production of a forward-looking and flexible computer system by Acorn.

There are always dissenters, but I feel the Acorn market has a future: this might sound like a somewhat half-hearted thing to say, especially for those who have invested money in Acorn machines. But this is surely the whole point; so many companies have gone down the tubes recently that survival and making money are the main aims, and Acorn is doing both (that is, if you ignore the latest sets of results, which show a loss; this is partly due to development costs of the Risc PC, and partly due to the setting up of Online Media).

Fair enough, it would be surprising if an Acorn magazine was to sit down and have a go at Acorn, just like *Acorn Abuser* used to do every single month for years. But over the last two years there has been a kind of *glasnost* at Acorn: the people who matter have realised that good PR is not just a good thing, it's vital; the mainstream PC press is showing an interest in Acorn now that the Risc PC has arrived; and products like *Sibelius* and *Impression Publisher* are proving to the rest of the computer world that Acorn can compete, and even beat the big boys.

You'll find the next five pages interesting, not least because there are some very honest and controversial opinions voiced. What will *actually* happen is hard to say, but at least it will be interesting...

Mark Moxon

The outside world

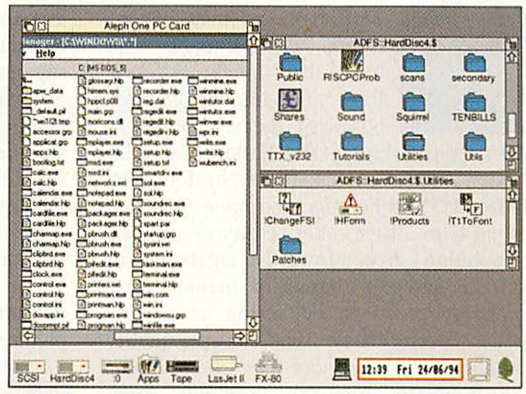
1994 was a special year for Acorn. After all it saw the birth of Online Media and the crucial success of the Risc PC. 1995, however, will be tough.

All eyes will be on the Risc PC's new 486 PC-compatible plug-in card. The ability to run PC software is the ultimate irony for the maker of an independent computer platform, but it might prove to be the long term saviour of RISC OS and, more fundamentally, Acorn itself.

Undoubtedly, people will buy Risc PCs now because of the affordable option of PC compatibility when, previously, they would not. Hopefully, they will continue to appreciate the relative merits of RISC OS and be happy to exploit the best of both worlds. There is a worrying trend by Acorn third-party software developers towards producing PC-versions of their RISC OS offerings and, more seriously, this has delayed or even ended the much-needed development of native RISC OS applications.

There are two reasons for this. First is the absence of up-to-date RISC OS development tools, centred around the lack of a top-class C++ compiler and the failure by Acorn, so far, to reveal any radical development of RISC OS itself. Second is the fact that the potentially lucrative PC market is hard to ignore. In 1994 we saw little evidence of Acorn answering these problems, but 1995 should see a change for the better.

One thing virtually guaranteed is that Acorn will get much more of the limelight with the Risc PC with the 486 card, as the combination will at last be recognised as a bona fide PC by the mainstream computer press. So, Acorn will be provided with an opportunity to publicise RISC OS on the back of the 486.



Multiple operating systems in one machine: the Risc PC can deliver such power.

While the Risc PC is a lovely machine, which will be even lovelier with faster ARMs, like 50MHz+ ARM700s and even the arrival of ARM800-series chips, Acorn must deliver its less glamorous A3010/3020/4000 and A4 portable replacements in 1995. With the announcement of the computer-on-a-chip ARM7500 evolution of the ARM250 late in 1994, Acorn already has a key ingredient for new lower cost desktop machines and up to date power-efficient portables.

The job of making the Acorn world fit into the PC world, with PC networking compatibility and real DOS software compatibility, among other things, should be completed in 1995. Buyers will, hopefully, no longer have fundamental reasons for rejecting Acorn computers. However, in the longer term, Acorn has to make up its mind whether or not it is going to maintain the viability of RISC OS by investing adequately in the development of that operating system, as well as in the third party software developers who continue to support it. Otherwise, Acorn could simply be forced to become just another PC manufacturer.

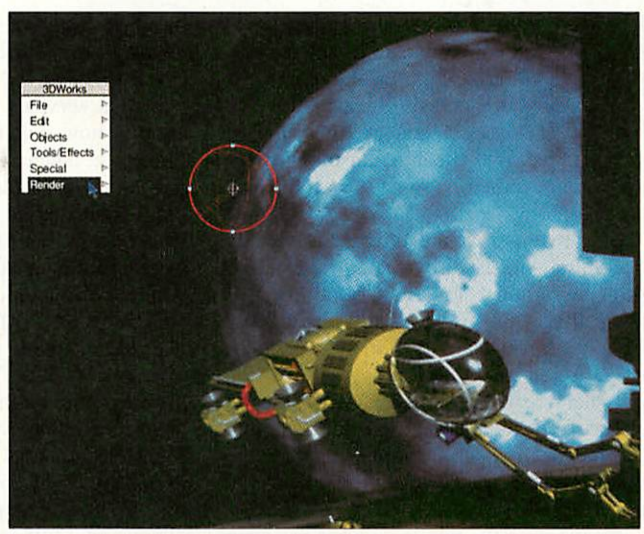
Ian Burley

Graphics

ABOUT a year ago the launch of the Risc PC promised to revolutionise Acorn machines in terms of hardware performance and graphics capabilities. The software that has subsequently evolved has made a definite change to the Acorn platform's standing in the world of computer graphics, changing it from something of a tail-ender to, in some ways, a world beater. And it seems as if most of the exciting graphics developments that will happen on the Acorn platform will be happening on the Risc PC.

With the expected increase in processing power in the future, users of currently-available graphics software will be enjoying two- to three-times speed improvements, and with the imminent arrival of multi-processor technology, rendering and fractal generation will become a far more interactive, real-time process than it is now. With five ARM700 chips on a co-processor board, we are looking at 250 MIPs processing power – more powerful than mid-range Silicon Graphics workstations. If Acorn third parties take this opportunity and create ARM-optimised software for 3D graphics then we have a lot to look forward to. Eidos has already seen the advantages that the Risc PC has to offer and its *Optima* video editing software should take the world by storm with its real-time video compression and editing systems.

In the area of 'repro' graphics – that is professional photographics input, manipulation and imagesetting – we will see, I hope, an increase in the number of high-end facilities in image manipulation packages, like those found in the likes of *Photoshop 3*. If the Acorn platform is ever going to make a stand, let alone sustain a position as a serious alternative to the Mac or PC, the development of packages like *DA's Picture*, *Photodesk* and *Studio 24* will be vital.



DAVE WILCOX

If the momentum continues to stay in effect, the same enthusiastic drive that resulted in the launch of all those excellent photo retouching and art packages will take Acorn graphics software to a level that could not even be imagined twelve months ago. Some of the things we can look forward to are object layering in the bitmap packages, or even complete object-based bitmap applications like the forthcoming *Composition* from Clares; 3D and exotic stylistic effects like texture generation; high frequency and stochastic screening; dye sublimation printer drivers; and broadcast quality digital video. A veritable feast for the hungry graphics enthusiast.

Jack Kreindler

Desktop publishing



THE DTP system of the future will probably not look that much different from the innocuous grey boxes of today. The monitors may get bigger and flatter, the boxes sexier and the names sillier. No doubt the letters PC will be engraved upon them all, along with all the other acronyms, and the continuing creep towards gigabytes of storage and big chunks of memory will probably continue, delivering as it does better performance and higher-quality output to all and sundry. Let's hope Acorn sorts out its FileCore problems soon, before the limit imposed on RISC OS media becomes a serious embarrassment.

Assuming all goes to plan, 24Mb TIFFs will no longer pose problems, thanks to some nifty footwork by the operating system. Client-based technologies like OLE 2 (if someone invents it for the Acorn) will enable data import and export between different platforms and packages. Incompatibility will be a thing of the past; at least, that's the idea.

CMYK will have been replaced by a new six-ink process from Pantone which will offer far better colour saturation and reproduction. And perhaps the stocastic screening system will be incorporated into this to produce even better results, as it currently does for very high end CMYK separation work.

Colour proofing via dye sublimation and colour laser printers will be affordable for anyone, and 1200 or 2400dpi colour output shouldn't be beyond the reach of anyone with even moderately deep pockets.

Scanning and imaging should be similarly enhanced, with infra red links to import data straight from a digital camera or camcorder – none of this 'print the picture then scan it in' lark.

CD-ROMs will be replaced by media with much larger storage capacity, and physically smaller magneto-optical discs will become much more popular, with their faster access times of around 1Mb/sec and their ability to be written to. Perhaps the 1Gb floppy will also be with us.

Voice recognition will probably be part of future operating systems, and even my scrawl will be easily deciphered into text by some form of handwriting recognition. An array of parallel processors will let my personal computer do everything at once, and the hourglass will never appear.

Clip art libraries will become somewhat eccentric since you will be able to source just about every image ever taken directly down your modem from the World Wide Web. This will quite happily let you steal frames from movies, copy Disney pictures and access photo libraries on-line, for a suitable fee of course. Connection will probably be compulsory.

Connecting just about anything to your machine will quite literally be a matter of plugging it in; SCSI will be replaced by Apple's latest 'standard' FireWire (also known as SCSI 3). Perhaps there will finally be some industry standards that everyone actually conforms to, or perhaps that's taking it just a bit too far: a PowerPC card, perhaps?

Will there be a Virtual Reality DTP environment for us to construct our pages in? It's doubtful that this will be the case for conventional printed media, which will probably keep the current screen-based paste-up approach. It is, however, much more likely for the emerging electronic publishing industry, which will do things with multimedia and VR that can only be imagined today.

Books will never be outdated, but I suspect that far more publishing will be on-line than is currently the case. Let's hope Acorn will be there leading the pack onto greater and better things: the hardware is certainly capable enough.

Steve Powell

Communications

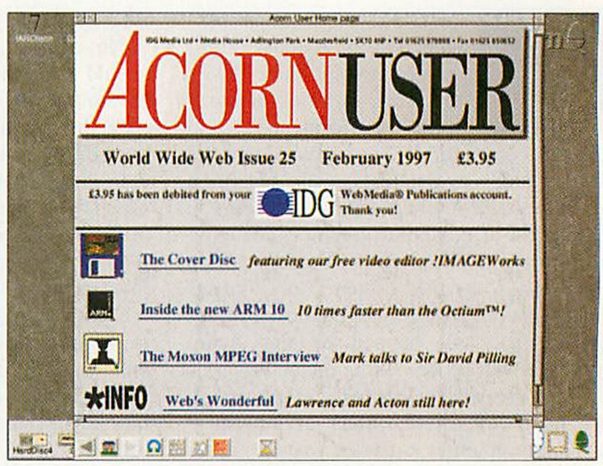


HOW will the explosion of communications technology affect us in the next few years? Will we still be logging on to BBSs in five years' time? Will the Internet remain free and ungoverned, some would say anarchic?

It's obvious that the Internet is already becoming congested by the exponentially-growing number of users. One way of controlling this growth will undoubtedly be to make many more services subscription-based. As more information providers realise the value of worldwide access from the Internet and the potential for income by subscription services, the number of free services will dwindle as the info-barons take over.

By the time the whole country has been 'wired' with high-speed optical fibre data links, it will be hard to justify charging varying rates for communication routes between places within the UK. To enable a cross-section of society to use this unstoppable spreading web of superhighway strands, the cost of using the system will need to be kept low if the actual information retrieved is to be charged for. With little difference in the equipment capacity involved in making a short or long-distance call, the whole country may become a 'local' call area.

Online services that are on trial now will be commonplace, such as Video on Demand, Home Shopping, Interactive Video games and so on. The existing Internet can't cope with all this, and will be superseded by ATM data highways with much higher bandwidth. You will probably be reading this magazine online, with 'The Simpsons' channel playing in one corner of your desktop, MTV – renamed MPEGTV perhaps – playing in another, while you voice-click through the *Acorn User* Web pages.



***Acorn User* on the Web: could be, one day...**

There will still be bulletin boards, because there will still be enthusiasts to run them and call them up, but we may dispense with modems and use ISDN-style links. With a pure data connection, it would be easy to develop a cost-saving protocol to disconnect and re-connect to the BBS system between menu screens and message reading to minimise online time. File transfers will be much faster, with uploading and downloading on writable CD-ROM MiniDisc media for high-density storage.

Will we be any happier with our high-speed ATM WebWorld though? I fear that with fewer incentives to leave our homes and interact with other real people, social skills will suffer. To retain the art of conversation, we'll need to keep up the tradition of meeting up for a meal and a chat, so you're all invited to the Arcade BBS Millenium meet in the year 2000.

David Dade

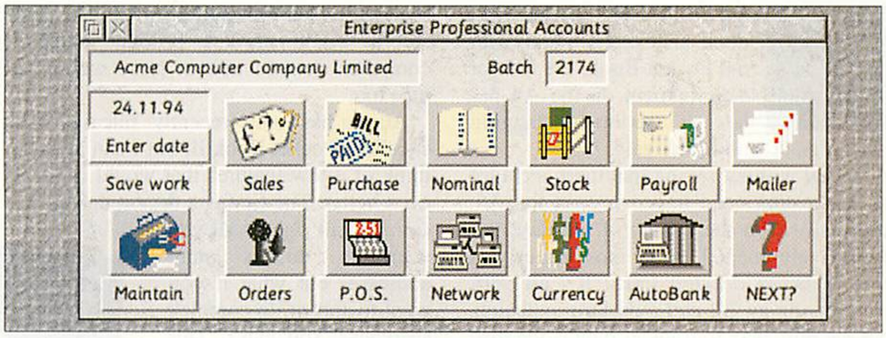
Business



JUST over ten years ago, using an Acorn in a business was thought of as quite respectable. At the time the BBC micro was the most widely used computer in small businesses in the UK. No, this isn't the April issue – the Beeb *was* the most widely used. Unfortunately Acorn slipped up in the second half of the eighties and it has taken what seems like eons for quality business software to appear. Fortunately the past few years have compensated for that and, while PC clones are used more in small businesses, there are now only small gaps in what Acorns can do.

What about the future? At the time of writing, Colton Software was planning to launch *Fireworkz Pro* at BETT '95. This is the first truly integrated word processor, database and spreadsheet in the world (previously packages of this nature were bolted together by a shell and relied heavily on cutting and pasting and OLE). But will this be the last in Colton's family of 'Z' programs? Certainly not. There are already rumours of *Fireworkz 2* featuring many user requests.

Apricote Studios will continue to update its *Prophet* accounting package and, as reported in last month's *Acorn User*, will be releasing *Prophet 2* at the *Acorn User* Spring Show this April. Beyond that, Apricote is considering a VAT return program for those who don't need an entire accounting package.



Could this be *Enterprise Accounts* in the not-too-distant future?

I expect you've all heard of *Quicken* on the PC but, just in case you haven't, it's a fully-editable accounting package for home and small business accounts. Rumour has it that Apricote will have a similar sort of package on a stand at the Spring Show.

ACP certainly does have plans about its software. Future features of *Enterprise* include multi-currency accounting and order processing, and a network version should appear over the next few years in the form of modules, making *Enterprise* even more suitable for large companies. Unfortunately there are no plans for Gantt (bar) charts in *ProjectING*, ACP's project management program, which is a criminal shame. I can only hope that ACP changes it mind.

One program I'd really like to see an Acorn equivalent of is *AutoRoute*, a PC package to work out the quickest route between two places in Britain. The benefit, however, is not only for yuppies with portables, but also for families going on holiday.

Things are looking up for Acorns in business...

Alex Singleton

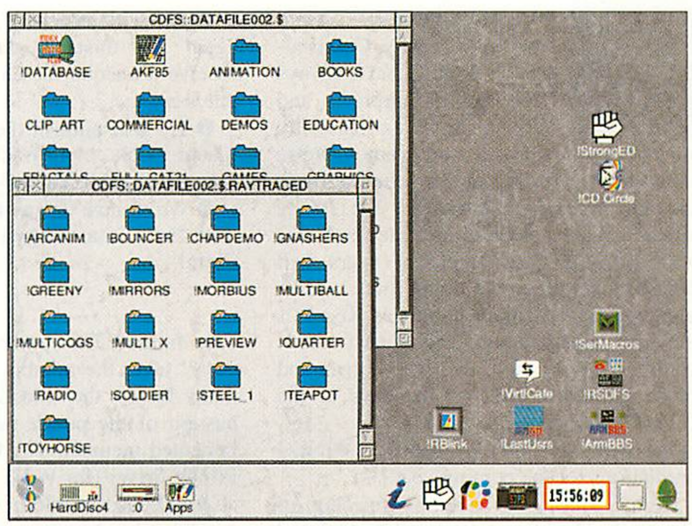
Public Domain



I BELIEVE very much that the future of the Public Domain scene is heading towards more commercialisation as the trends of the last year are continued. As I have higlighted in the PD column over the last few months, many of the smaller PD libraries are being closed down or taken over by the bigger players. In the short term this probably just makes it easier for us, the users, to find the PD we want from one or two libraries' massive ranges of software, but as a continuing situation, this trend will reduce the diversity which is the life blood of PD software. Fortunately we are still in the hands of real PD enthusiasts like David Holden and Dave McCartney of the APDL and Datafile libraries, and without them I fear we would be moving towards looking at PD as a business proposition rather than as an enthusiasts' hobby.

The profusion of CD releases highlighted in the last few issues looks set to continue, as the libraries discover a new way of bulk selling PD to the user. This is in actual fact a continuation of the trend I've discussed above, but in this case it actually benefits the user. PD-CDs are great value for money and look set to become an important feature in the PD field as the CD-ROM format becomes more widespread and popular.

Although the advent of the Risc PC has done little as yet to affect the PD scene, I think that Acorn should be making use of both the great talent and the excellent software found in the Public Domain. Amid much discussion about Acorn's next moves on RISC OS, I would like to see many of the ideas found in PD programs to be incorporated in RISC OS 4. RISC OS has to be one of the best GUIs around but does contain the odd omission, and the PD scene contains ordinary users who write patches or utilities to fill these gaps. Why not add these extra features to RISC OS 4, or at least include some of these programs with what is now a hard disc-only computer base?



Public Domain on CD-ROM: one way forward, at least.

On a final and perhaps optimistic note, I believe that shareware will gradually begin to take a more important role in the market place. Given the quality of a lot of the PD software available, I would argue that most commercial software (on all formats) is vastly over-priced. Shareware could fight this situation if both the software authors and users were prepared to put more faith in this medium.

Paul Wheatley

Portables

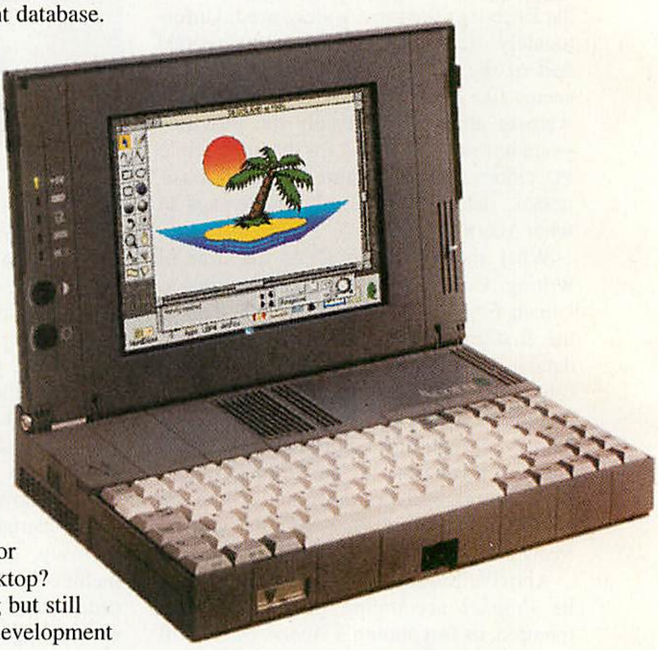
ALTHOUGH Acorn has done an excellent job with the Pocket Book, the lack of development on the A4 has left it seriously lagging behind its PC and Mac rivals.

It goes without saying that there are a lot of things that need improving on the A4, especially after the launch of the Risc PC. The development I await most eagerly is that of better desktop links. It's all very well having an A4 and a desktop machine, but the only way to transfer data is via disc or the rather slow *RemoteFS*. What Acorn needs to do is create a docking system where the portable's hard disc behaves as another hard disc on the desktop machine – a portable Access card would be a start...

Colour would also vastly improve the A4 and make it much more marketable – most new PC notepads have a colour screen as standard and no longer have mono versions. An internal fax modem would also improve the A4 no end. Although a modem can be connected to the A4 it's a bit of a pain having to carry it around in your pocket – the whole idea of the A4 is portability!

Add to these suggestions a powerful processor (perhaps the ARM7500), better expansion facilities, plenty of memory, a built in tracker ball and a stylish case and Acorn would have a brilliant notepad computer. A reduction in price would be nice too.

Acorn has only recently released the excellent Pocket Book II, but I can already think of a few features that would make it even better. The first is a decent database. *Cards* is all right if all you want to do is store addresses but what if you want to sort or do complex searches? You can't. This problem becomes very obvious in a school situation as it dramatically limits the levels obtainable in the National Curriculum data handling module.



The other feature I'd really like to see is a more integrated approach to the software. Wouldn't it be nice if you could import a graph from *Abacus* into *Write* or if you could easily import your weekly diary from *Schedule* into *Write* or *Cards* to upload to the desktop? Perhaps this is wishful thinking but still it would be useful. Another development urgently needed in the portable sector is more hardware and software products from third parties to kick start the portable sector into action.

Is all this asking too much?

Mark Taylor

*INFO

PREDICTIONS? Well, who knows really. Contributors to *INFO have always been full of surprises and although we're occasionally surprised at how awful a program is, we're more often surprised at how cunning people are. We would hope that the steady stream of splendid bits and pieces we've had over the past couple of years will continue and grow. No doubt there will be plenty of 24-bit colour demos as Risc PCs increase in population, and if past trends continue, applications will get bigger and more ambitious. Roll on the days of the cover CD-ROM...

Anyway, here are my top five *INFO predictions for the coming year...

❶ Jan Vibe will become president of Denmark. The Danish flag will be replaced by a series of 256 flags in slightly different colours to be raised and lowered at $^1/_{50}$ second intervals.

❷ Jonathan Smythe-Cupola of Sutton-on-the-Wold will supply a demonstration of the little-known Kowczelski fractal. He will write 'I am surprised that this fractal has not been given the audience it deserves'. The program will draw a small brown patch in the bottom left corner of the screen. It will take six days to do this.

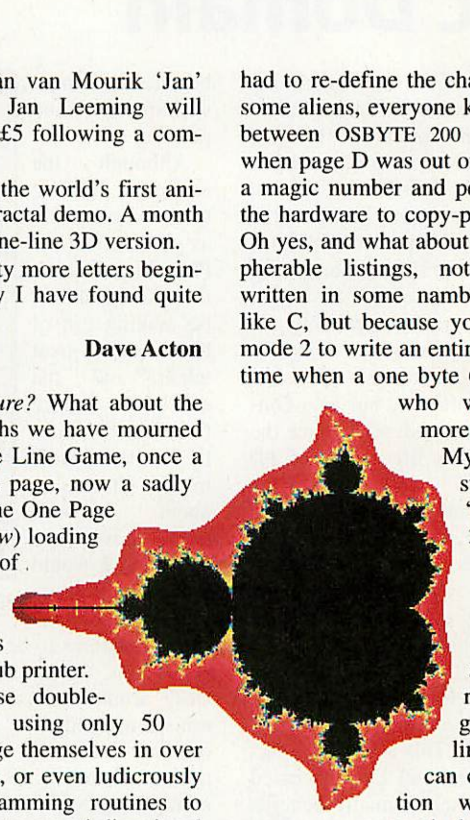
❸ We will call Jean van Mourik 'Jan' again by mistake. Jan Leeming will receive a cheque for £5 following a computer error.

❹ We will publish the world's first animated 24-bit colour fractal demo. A month later we'll publish a one-line 3D version.

❺ We receive twenty more letters beginning 'here is a utility I have found quite useful'.

Dave Acton

The future? *The future?* What about the past?! Over the months we have mourned many losses: the One Line Game, once a bastion of the puzzle page, now a sadly lamented memory. The One Page Printer driver (for *View*) loading at &400 and capable of goodness how many bold, italic and underlined characters on a Shinwazi golf club printer. How about all those double-height text routines using only 50 bytes of code that page themselves in over the tape loading code, or even ludicrously cunning 6522 programming routines to turn the 1 MHz bus into a omni-directional SCSI 3 compatible Ethernet?



We're talking about the days when you had to re-define the character set to make some aliens, everyone knew the difference between OSBYTE 200 and OSBYTE 229, when page D was out of bounds, FFE0 was a magic number and people used bugs in the hardware to copy-protect their games. Oh yes, and what about completely indecipherable listings, not because they're written in some namby-pamby language like C, but because you only had 5K in mode 2 to write an entire game. This was a time when a one byte GCOL was enough: who would ever want more than 128 colours?

My computer used to start up saying: 'BBC Computer 32K'; it now says '34M'. Before we had to drop the eight-bit coverage we were receiving submissions that really stretched the good ol' Beeb to its limits. Let's hope we can continue this tradition with some really ground breaking programs for ARM7s, VIDC20s and 34Mb.

Dave Lawrence

Games



BOUGHT a CD-ROM? Bought a double-speed CD-ROM drive? You're behind the times, mate. We're all on triple-speed now and it looks like games to take advantage will be hitting the market in time for next Christmas. Got a pair of speakers to blast the sound through? Stereo? You're behind the times again... it's Dolby Surround now. Got a slow machine? You should be ashamed... it's 60Mhz or forget it, son.

Frightening isn't it? All these updates, clock speeds and accessories to play games on, games that weren't even dreamt of five years ago. To be honest there are very few people out there with the souped-up-to-the-gills type of machine needed to achieve that 'virtual reality' effect, but you can't help but feel you're missing out on something.

The Acorn market is a sheltered corner of this fast-paced world, with games still very much in their infancy, and Amiga conversions and the odd PC clone to keep us all happy. Admittedly, many of the larger fish have started to produce first-rate software for the Arc, and have even taken time out to package it up nicely for us, but it's still very much a lovingly-created home-grown affair. I mean, try attending a PC or Amiga show and then telling me you spent ten minutes talking to the programmer without an appointment.

But what will happen with this Risc PC revolution then? Will technology advance so quickly again that we don't make the most of what we have now? If more and more people start on this downhill trend towards upgrades, then neither the games industry or the potential buyer will stop to take advantage of present technology. Take a step sideways. Look at Sega and Nintendo. You have to take your hat off to these boys with their 'fast food'-type games and machines. Let's face it, the average gamer doesn't want to sit down with a small town and nurture it to profit; he wants a trip to fantasyland that needs skill, co-ordination and maybe a tad of brain power. This is where Sega and Nintendo step in with new machines offering *true* arcade-quality games that take your breath away.

It all adds up to different machines. One is for the kids to grow up on, with Sega and Nintendo being the main players; and then another, as the emphasis swings to more serious matters where it's the realm of the hard drive and MHz. The word 'Edutainment' just won't be in the dictionary.

Steve Atherton

Education and networking



CRYSTAL-BALL gazing is not one of my strong points, and I've learned that in this business predictions will almost certainly prove to be wildly off the mark, but here goes. Acorn has established itself as the leading provider of computers for education. My concern is that this very laudable commitment appears to have been to the almost total exclusion of other markets.

Because of Acorn's previous lack of desire to push into other arenas in a way similar to Apple, the two other main platforms (PC and Mac) now have a stranglehold which I can't see being easily broken. The result is that many authorities are now installing computers into schools and colleges that conform to the mythical industry standard. Those in the 'industry' (i.e. not in education) have seen the opportunity and are now developing education software for these platforms.

If you don't believe this is true, take a look at the CD catalogues that are regularly distributed to schools. With the exception of Cumana and one or two others, most list PC and Mac products, with only a passing mention of Acorn, if they're mentioned at all. At least a couple of times each half term, colleagues come to me with glossy brochures extolling the virtues of the latest CDs they've seen advertised for their subject. 'Can we put this on the network please' is the question one can usually see coming from the other end of the corridor. In almost all cases I have had to say, sorry, it won't run on our system.

In fairness, some (but by no means all) such CDs have been put together with little or no consideration for the needs of our school children and are obviously the result of someone trying to make a quick buck. Many, however are excellent resources and ones which I would certainly buy if I could run them. (I know that they will run on the Risc PC with a PC card, but that's no help if you're trying to run them over an Acorn network comprising largely of A3020s.)

When people ask me which computer to buy, my stock reply is, 'The one that runs the software you want to run.' On that basis, choosing an Acorn may be becoming more difficult.

Geoff Preston

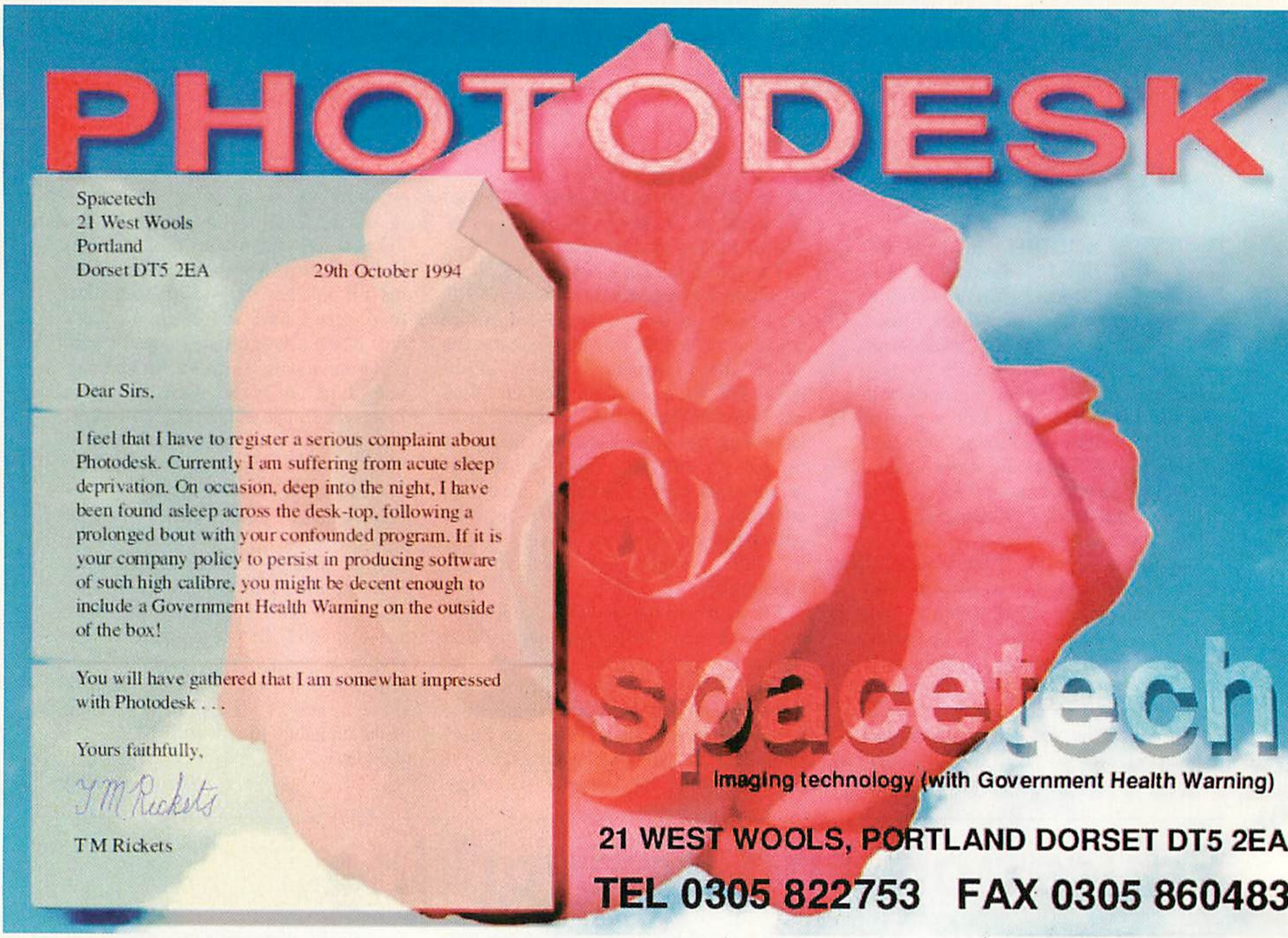
PREDICTING the future of networks is difficult, mainly because much of the future is already here. But even so, this is an area in which I predict there will be very significant advances during the next few years.

After several years of waiting for a successor to Econet, Acorn now has a viable network solution in the form of Ethernet. Many schools up and down the country are experiencing first-hand the very real benefits of networking, especially between different buildings and several classrooms and learning areas. On the hardware side, there will be faster fileservers. At present, many schools, like mine, are using A5000s or Risc PCs for the fileservers and while these are very powerful stand-alone machines, they are not best suited to serving multiple stations. Computers are now becoming widely available which were specifically designed to be fileservers and the networks they serve will be significantly faster.

Perhaps the greatest advance will be in the development of software that is not only network efficient, but actually makes use of the characteristics of the network. We already have databases which enable several users to write to the same record of the same datafile. Groups can gather data and collectively enter it, enabling all users to produce one major piece of work rather than several smaller individual pieces. Other programs too will soon have similar features. A class will be able to sit down at various computer stations, each with the same copy of a blank DTP document of say, a newspaper page. All students will be able to contribute to the common page and if one user attempts to add a piece to an area that someone else is already working on, the computer will stop him and suggest an alternative part that nobody else is currently using. All computers will update the displays so that everyone can see how the page is developing.

Some years ago I saw an Econet simulation of an emergency on an oil rig where the network was used to communicate between the 'oil rig' and the 'emergency services'. Interactive simulations like this which use the network to communicate between users will also appear in greater numbers, hopefully from some of the software houses which already have a sound reputation for quality business software as well as those who specialise in education software.

Geoff Preston



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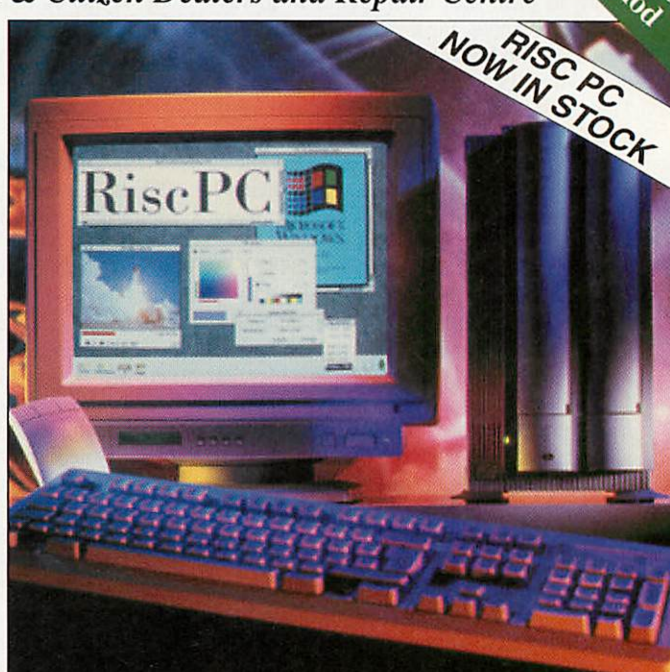
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PART EXCHANGE SCHEME AVAILABLE

Hot off the press

We've been saying for years that Acorn's RISC machines are excellent for professional desktop publishing, and now we've got the proof: this magazine. Mark Moxon explains how *Acorn User* is designed and produced on Risc PCs.

Magazine production on Acorn equipment is, in our experience, much quicker and easier than on a Mac. This could be down to a number of factors: the fact that we know *Impression* better than we know *Quark*; because System 7 is still struggling to understand concepts like drag and drop and icon-based printer drivers that RISC OS has had for ages; or perhaps it's because all our writers create work in Acorn formats.

Whatever the reason, when we came to re-design the magazine back in the December 1994 issue, it was totally logical to do the re-design on an Acorn machine, despite the fact that Macs were used to create the magazine. The re-design was done from the bottom up: master pages were created from scratch, design ideas circulated round the staff for comments, and from conception to implementation took about two months. This article aims to show you how to design your own magazines, newsletters or whatever, and how to avoid the most common pitfalls in designing layouts.

Starting from scratch

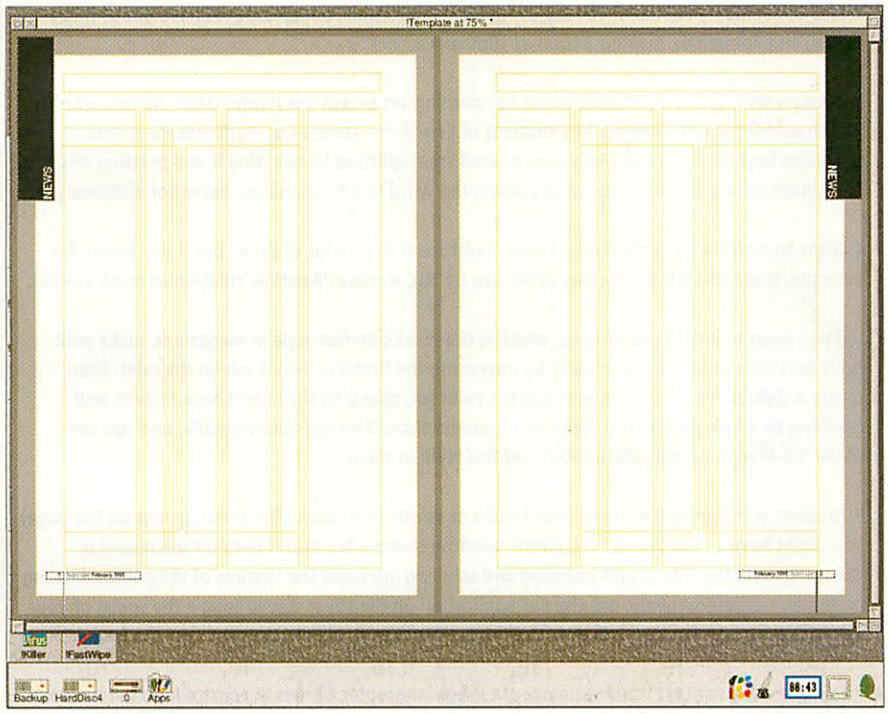
The most important decision should be made at the start: what kind of design are you looking for? In the case of *Acorn User* it was quite obvious: a readable, clear style without ridiculously complex layouts, but with a clarity that suits a computer magazine. If you're looking for more flair – if you're planning to design something like Future's *Edge* – then you still need a rigid master plan, it's just that you can break the rules more often.

For *Acorn User*, the choice of the Trinity font for the main body text was easy: it's a traditional and functional font. However, the choice of a sans serif font to complement the serif body text was not quite so easy. The obvious choice was Homerton, but so many magazines go for the Times and Helvetica approach, so we chose Frutiger, as it is more suited to close kerning and has a more modern feel to it. The only other font we use is Corpus for listing segments, and Selwyn for dingbats.

The total number of fonts used in *Acorn User* is small; ignoring italic faces, we use the following:

Trinity.Medium	Selwyn
Frutiger.Light	Homerton.Medium
Frutiger.Black	Homerton.Bold
Frutiger.Bold	Corpus.Bold

That's a total of just eight fonts, and yet these can produce the variety we need for an entire magazine.



The News master page. Notice all the guide frames: the only actual printed information on this page consists of the folio and imprint, and the page flashes, which are coloured black so it's obvious they need to be changed when a page is laid out.

Template files

The next step is to produce master pages for the magazine, which are stored in a document called a *template file*. This template file will form the basis of every page created for the magazine: this is probably the most important part of the whole process, as any decisions you make at this stage will affect every page created in the magazine.

A template file consists of a collection of master pages, and all the styles used in the magazine. At *Acorn User* we have four master pages defined in the template file: two column, three column, four column and News. As each article is designed differently – except the regular columns, which have a style used every month – the master pages contain all the details necessary for any layout, but don't actually contain much layout at all. As can be seen from the shot above, almost all the detail on the master page consists of guide frames: the actual text frames are added later when individual pages are laid out. This enables you to keep a rigid layout philosophy, but also enables you to break the rules when appropriate.

The text styles used in the magazine are also defined in the template file. In this magazine we use 21 different styles, with six more specifically for the contents page.

Ten top tips for Impression users

1 If you need to copy a lot of frames from one page to another, keeping them in exactly the same place on the page – which you might have to do if you want to redefine the amount of bleed on a master page, or alter the line space grid, and you want to copy over your master page frames – then there's an easy way to ensure an exact match. Create a frame in the far top left-hand corner of both pages, and use the Alter frame dialogue to make sure they are in exactly the same place (in other words the X and Y values are identical. Now select this frame first, and then the rest of the frames on your source page using Shift and Select. Copy these frames to the clipboard, and paste them onto the destination page, snapping the paste to the top left-hand corner of the frame you've created. The frames will all be in the right place, and you can delete the two frames you've created.

2 When creating styles which use a larger font size than surrounding text – like crossheads in this magazine (the sub-headings throughout the main body text) – make sure the style doesn't foul up the overall line spacing: it must be a multiple of the body text's line spacing to make sure columns line up at the end. For example, if your body text is 9pt with 10pt line spacing (like in *Acorn User*), then your crosshead style must keep this intact: our crossheads have 6pt of space above, and 4pt below, making a total of 10pt space.

3 Create a style called *Don't split* which has nothing set except the Hyphenation option, which you should set to Off. Give it a key shortcut of Ctrl-Shift-_ (that's Ctrl, Shift and the minus/underline key), and you can easily stop a word from splitting by selecting it and pressing this key combination. This is much tidier than putting the word in a Hyphenation Exception dictionary.

4 Learn *Impression*'s key shortcuts. There might seem to be a lot of them, but if you know, for example, that Ctrl-Shift-T increases point size by 5pt, it makes headline creation so much quicker.

5 If you want to indent paragraphs, which is the most common style in magazines, make your body text style indent automatically by increasing the first line indent tab on the ruler. Then create a style called *No indent* with just the ruler set, changing the indent back to zero, and applying to whole paragraphs. Now your paragraphs will indent automatically, and you can easily 'un-indent' paragraphs by applying this style to them.

6 To select thin frames (i.e. those with height or width zero, useful for drawing lines on the page) you might have to zoom in and scroll the window round a bit. This is because the mouse is 'stepping' over the frame, and zooming and scrolling increases the chances of the pointer landing on the frame. Alternatively, use the *Rat* application on the cover disc to toggle the speed of your mouse: clicking on the icon will slow the mouse down so it will always pass over the frame.

7 To make irregular text frames, simply use irregular graphic frames to constrain text in a normal text frame. To create the blank graphic frames, load up *Draw* and save an empty *Draw* file into the frame: it can now be made irregular. If you need to resize the frame by using Adjust on the Size control handle in the graphic frame, you should create an invisible object in the *Draw* file, otherwise you won't be able to magnify the frame.

8 If you have a load of text in *Impression* with un-sexed quotes (in other words it contains ' and " instead of ', ', " and ") then you can automatically sex these quotes by saving the text out to *Edit* (using Ctrl-F3 with With Styles ticked and Linefeeds and Returns unticked) and save it back in. For this to work, make sure Smart Quotes is ticked in the Preferences dialogue box. Also, if you have a style applied to the first paragraph in the text that alters the first line indent, you will have to apply it to the paragraph again, as it fails to apply to the very beginning of the file.

9 If your articles require a lot of work, always set the Auto Save option in the Document Preferences dialogue box. A good setting is every ten minutes: this is just often enough to save heartache, and not so often that the dialogue box drives you to distraction. It's a good idea to set the prompt to on, as sometimes you might not want to save over a previous version.

10 If you have *Impression Publisher Plus*, create a colour called Rich Black made up of 60 per cent Cyan, 30 per cent Magenta and 100 per cent Key Black. Use this colour for headlines, as it produces a much richer black that feels much more dynamic on the page. You should not use Rich Black for small text, however, as any registration errors at the printing stage will make the text almost unreadable. The only disadvantage is that selected text disappears when in Rich Black, as its inverse isn't white any more.

These styles cover everything, from the text used for page flags (the text along the top of the page, in this case 'Professional desktop publishing') to that used for box copy (as in the box on the left). Styles should be used rather than effects, as this ensures a consistency throughout the publication.

Once the master template file has been defined, with its styles and master pages, it will change a lot over the first few experimental layouts. You'll probably find that certain styles affect the overall line spacing incorrectly; you might find you have specified the page margin incorrectly, or your line grid is incorrect, in which case you need to re-create your master pages (using hint 1 opposite); and you'll almost definitely find you've made a genuine mistake in one of the style definitions. The whole point of a design is that it must be tested thoroughly before it goes into production, and to this end most designers produce a dummy copy of the magazine, typically using Latin prose as the text to avoid the words themselves distracting from the style and design.

From start to finish

Having created your magazine and decided on what it will look like and how you are going to lay it out, the next hurdle is deciding how you are going to create a genuine issue of your magazine. Here's how *Acorn User* is put together, from the very first step to a completed magazine.

❶ Conception and commissioning

This step rather depends on your publication. You have to decide what is going in the magazine, who is writing each piece, which articles require artwork or photography to support them, and so on. *Acorn User*, like most magazines, operates far ahead of the actual month on the cover of the magazine: this issue, February 1995, was commissioned sometime in mid-November, and was laid out half before Christmas, and half after, quite a time before February itself.

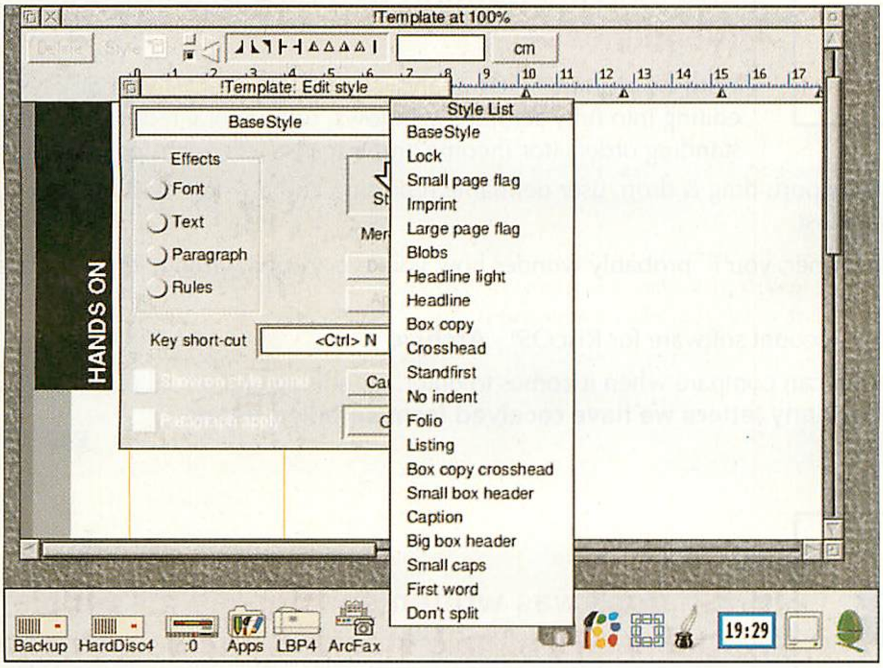
A lot of the ideas for articles come from freelance journalists, and readers themselves. More obvious articles are reviews of current products and regulars like the subject columns (Graphics, Comms and so on), the News section and pages like Free Ads and Next Month.

❷ The cover disc

Because our cover disc is such an integral part of the magazine, its content is decided early on in the life of an issue. As well as specially commissioned disc items – like the *HomeWorks* suite – there are tie-ins with magazine articles, like *INFO and C for Yourself, and readers' submissions. If your magazine will be read by those with computers, then a cover disc is an excellent way of expanding the magazine without needing more pages.

❸ Flatplan

The flatplan describes what will appear on every page of the magazine, including both



The different styles used in the master template file. Note that the copy template file only contains a small number of these styles – eight, in fact – so it is easier to check text for accuracy and spelling, without worrying about layout and word breaks, for example.

adverts and articles. Of course, before any pages can be laid down in the magazine, you need a flatplan to describe how articles are constructed, so it is one of the first things to be created in the magazine's cycle.

Needless to say, all *Acorn User*'s flatplans are done in *Impression*, using a frame for each of the pages, and a transparent frame holding the page numbers, so pages can be moved around easily. Frame grouping, as implemented in *Publisher*, facilitates the moving of groups of pages at a time.

❹ Receiving copy

Having commissioned all the articles and decided where everything fits in, the next stage is to wait for writers to produce their work (or 'copy' as it is known). This is where the fun starts: it's rare that any article you receive is completely error free.

One of the problems with receiving copy is that writers will 'help' you with little bits, like setting up their own crossheads, or defining weird styles called 'Author' and 'Byline', none of which you want to use. We get round this by providing freelancers with a *copy template*, which only contains definitions for eight of the styles used in the magazine; any other styles defined or used are deleted before the text goes anywhere near a page, and all unwanted effects are cleared. The text can then be simply cut from the copy template and pasted in the master template, and all relevant information is retained.

It is at this stage that photographs are sent up to the drum scanner to be scanned.

❺ First sub

A 'sub' is the term given to a proof-read – it's derived from the name of the person who does the job, the sub-editor. The first sub checks for technical accuracy and that the article fits the bill: sometimes articles come in which are not quite what was expected, though this is very rare. It is at this stage that product prices are inserted and checked, and we make sure that pictures have captions, and that we're not going to say anything scandalous that will get us into trouble.

This editing is done in the copy template, as it has been designed to make text editing easy. As we are using *Impression*, it's easy to check spelling, punctuation, and so on at this stage, as well as indenting paragraphs, adding headlines and standfirsts (the small bit of explanatory text below the headline), and adding in the relevant styles and justifications. Note that at this stage we don't worry too much how long the article is (unless is is hugely short or overlength), so all checking is to do with content, not layout.

❻ Layout

This is the stage where creativity comes to the fore. Using the master template, the art editor must decide how a piece is to be laid out – two column, three column, four column or a News-type page – and must then copy the text from the copy template, paste it onto the page, and lay it out. Some articles are easier than others: The Moxon Interview always looks similar, C for Yourself and Questions and Answers are comparatively easy, but *INFO and main three- or four-page features are more of a challenge,

The News pages are also interesting cases, as they can vary immensely within a rigid framework. As can be seen from the shot at the start of this article, the News master page is a complex mixture of the two-, three- and four-column layouts, enabling pages to have varying width columns on them.

Other important points include making sure the pages are numbered correctly (by altering the chapter definition), checking the month in the imprint (the textual part at the bottom of the page; the number is called the folio), and making sure page flashes (the vertical text on the top corners) are correct.

Pictures are also placed on the page, making sure their frames are the right sizes, and their captions are added. The headline and standfirst are also placed on the page and, most importantly, the text is cut to fit. You shouldn't use tracking to make text fit: re-word the text instead.

❼ First proof

By this stage the article is 'to first', and is printed out for checking. Points to note are bad rivers of white space in text, removal of orphans and widows, the inclusion of an 'end of article' AU logo and so on. When these changes are made we are on to...

❽ Final proof

A final printout is made, and when the article is passed for publication, we...

❾ Print to film

The document is printed to a PostScript file using the standard printer drivers, and the file is piped to a film machine over a Macintosh network. Film is checked, sent to the printers, a completed magazine comes back, and that's the whole process.

So if anyone reckons Acorns can't hack it in professional colour DTP, you can now tell them that they're wrong. AU

Fitting to frame

As anyone who has tried it will testify, making sure a frame exactly matches the size of a sprite is a tricky business: any errors will show up as ugly white lines between the sprite and the frame border.

Fear not, because we at *Acorn User* have a solution: it's called *SizeFrame* and it's on the cover disc. Run the application and click on the icon bar icon to bring up a window. Now enter the width you want your picture frame to be – which you will almost always know as pictures are normally fitted to multiples of column width – and double-click on the picture frame to bring up the Alter Graphic dialogue box. Click on Information and enter the Width and Height values in the Sprite Size icons, and press Return. The frame height is calculated and displayed, so alter the frame to this height, double-click on the graphic with Adjust to scale to fit, and hey presto! A perfect fit.

Well, it would be perfect if Computer Concepts had fixed the bug with fit to frame: currently it does nothing of the sort. Now you have to go into Alter Graphic and manually muck around with the Scale value to bring the X and Y values as close to zero as possible. Oh well.

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Prophet

The small business accounting system for all Acorn computers*. As featured in Acorn User's recent Best Business Software Review.

Prophet is used by over 700 people in the UK to run their businesses more efficiently and is approved by UK Customs & Excise for VAT purposes.

Prophet is also used by many book-keepers and accountants (no limit to the number of company accounts) and increasingly by many schools and other UK institutions (free site licence available).

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Above all though, Prophet is aimed directly at the non-accountant, so if you need to computerise your accounts Prophet will not baffle you with jargon.

(*requires minimum of 2mb ram)

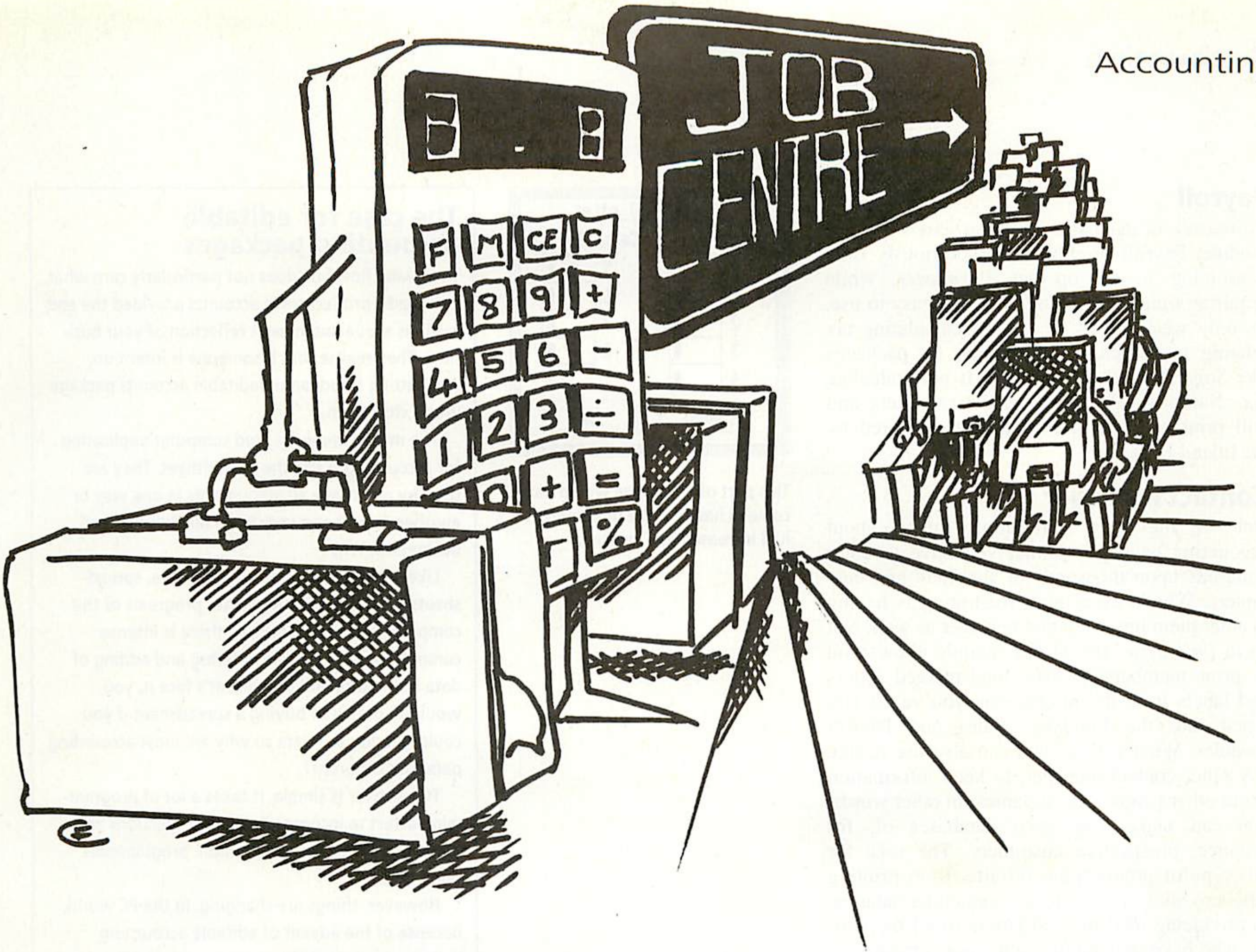
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VISA Access



CARL FOX

Looking after the **pennies**

Accounting on paper is notoriously time-consuming. Alex Singleton beams up a package to do all the hard work.

E *nterprise* is a new package from ACP, the same stable that produced the now discontinued program, *Micro Trader*. *Enterprise* is the replacement with an improved interface, and many user requests have been incorporated. However, the main difference between the two packages is *Enterprise*'s upgradability.

The main problem with many accounting programs is that you can grow out of them, have to purchase another one, and are forced to enter hundreds of supplier and customer details again. With *Enterprise*, you can start off with only the modules you require and then add more as you grow. So, although you may not, for instance, need the Stock module when you start out, but if in later life you do, you can easily add it.

Upon clicking on its logo on the icon bar, a control panel appears. This contains a number of icons relating to different modules. Clicking over any of the icons produces a pop-up menu corresponding to that icon.

The Maintain module is different from the rest as it is the only essential module, and if you buy an individual *Enterprise* module it comes 'free'. This is because it deals with setting up the program. From here you enter company details, set up VAT rates and make backups, but backups can only be made on the root directory of drive zero (i.e. only on floppy disc).

Sales, stock and purchases

The Sales module stores the details of the company's customers, what they buy and how they pay. So, basically, when Joe Newcustomer buys something, you enter his details, produce an invoice and, when he pays, tell the computer. That's called double-entry accounting. If you have a shop, you wouldn't necessarily print invoices and so on. These transactions are done in the Nominal module.

Assuming you also have the Stock module you'll be able to enter stock details into invoices. These will automatically be deducted from the stock levels in the Stock module. The module stores the details, quantity held and prices of – you've guessed it – the stock. It'll display and print out your stock list, re-order list, turnover and price list.

Now that we've dealt with selling things, what about buying? This is where the Purchase module comes in. There's not much to say about this except that it is used to enter details about all your suppliers, produce invoices and credit notes and so on.

Payroll

Paymaster is the name of *Enterprise*'s Payroll module. Payroll programs are notoriously time consuming to set up but *Paymaster*, while requiring time to set up, is clear and easy to use. Its only weakness is its lack of calculating tax relating to company cars, which PC packages like *Sage Payroll* can manage. It will calculate tax, National Insurance, pension amounts and will print payslips and documents required by the Inland Revenue.

Contact manager

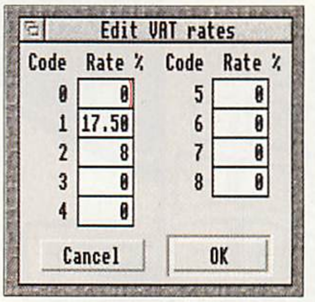
One of the most infuriating things about accounting packages is that you have to enter hundreds upon thousands of suppliers and customers. What's even more frustrating is having to enter them into a contact manager as well. Not so in *Enterprise*: the Mailer module allows you to print membership lists, mail-merged letters and labels from the information you've already typed into the Purchase, Sales and Payroll modules. What's more, you can also use it, like any other contact manager, to keep information about other people or companies. In other words, you can make your own databases of, for instance, prospective customers. The uses for this type of program are infinite, from printing labels to stick on envelopes containing salaries, to producing mail-merged letters to all the people who have shown interest in your company.

Another use for the Mailer module is to produce unusual reports from other modules. An example of this would be if you wanted a report of all your customers in order of how much they spent. The layout of these reports have to be produced in text format so therefore a text editor such as *Edit* should be used.

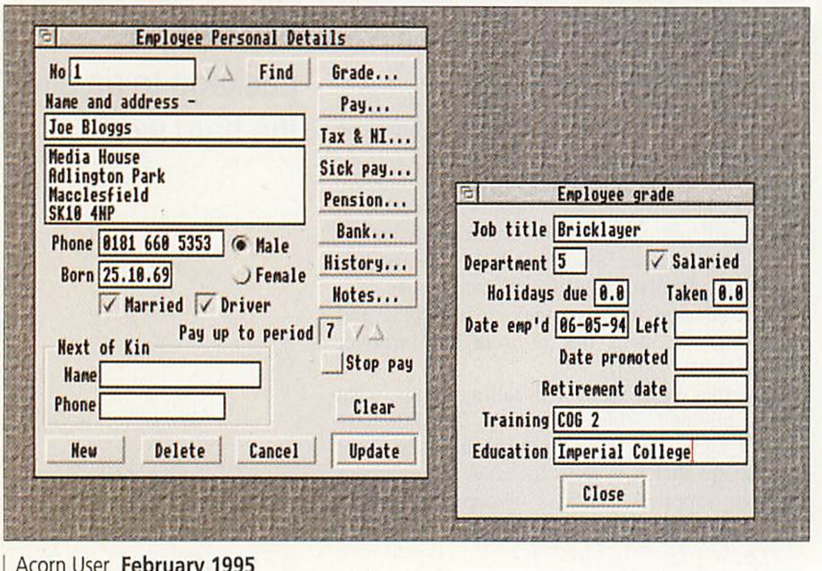
The *Enterprise* Mailer module is the most versatile and easiest contact manager available for the Acorn platform. Throw away your database and buy this!

Cash accounting

Of course, many shops will never need invoices and don't want to know about nominal headings. So what should they use? A special version of *Enterprise*, named *EasyMoney*, provides a similar interface but is designed to cater for cash-based businesses. To the user it isn't a



This part of *Enterprise* would have come in handy if the government had increased VAT on fuel.



Setting up your employee details with the PayMaster payroll module.

The case for editable accounting packages

The Inland Revenue does not particularly care what you use to produce your accounts provided the end result is a true and honest reflection of your business. They realise that if someone is intent on committing fraud, an un-editable accounts package won't stop them.

The most commonly used computer application for accounting is still the spreadsheet. They are used by practically all accountants in one way or another as well as a very large number of small businesses. Why?

Like word processors and databases, spreadsheets are the bread and butter programs of the computer software world, so there is intense competition to make the entering and editing of data both quick and simple. Let's face it, you wouldn't dream of buying a spreadsheet if you couldn't edit your data so why are most accounting packages different?

The answer is simple. It takes a lot of programming effort to incorporate editing functions and while there isn't the competition, programmers don't bother.

However, things are changing. In the PC world, because of the advent of editable accounting software such as *Quicken*, the more established producers are being forced to change their attitude (and their programs).

The only proviso that I personally have is that password protection should be incorporated to stop other people changing your data.

Quentin Pain, Apricote Studios

The case against editable accounting packages

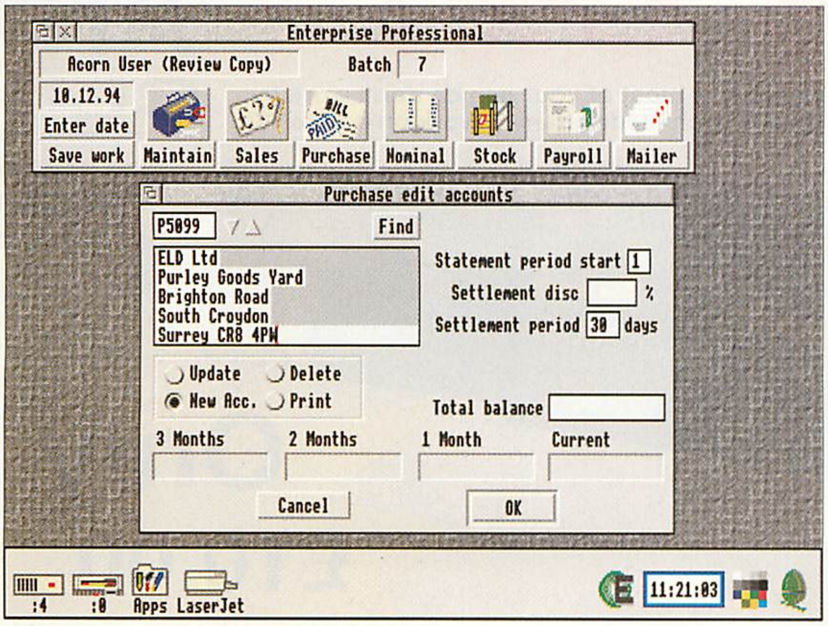
I hold that the best way to approach accounts software is to write it to emulate the 'paper ledgers', in other words the screen shows the debit and credit sides of accounts, so that the accounts staff have sight of all the transactions in a fashion that they understand (and even the auditors recognise it). All transactions recorded should be filed in an area not accessible to staff entering the data and should *never* be altered – this is the equivalent of the journal. In fact the best system would use a CD-ROM for this purpose.

All corrections should be made through either credit notes or debit notes, these to be numbered and filed. The notes should have a detailed reason for them being raised.

An accounts package such as *Enterprise* won't stop very determined people but it will deter and/or expose opportunists and make it awkward for the ones intent on ill-doing and make it more likely that they will eventually make a mistake.

I doubt there will ever be a perfect piece of accounting software. Therefore it is essential that firstly, the data entered is correct and is unalterable and, secondly, that the rules of accounting are scrupulously followed.

John Greenwood, book-keeper



Entering a new supplier using the Purchase module.

double-entry accounting package but, in fact, underneath it is. This means that if you decide to upgrade to *Enterprise*, your accounts can be transferred. An alternative to *EasyMoney* is being released this spring from Apricote Studios and will be based upon its popular *Personal Accounts* program. However it is unlikely that there will be an upgrade route.

Enterprise vs Sage Sterling

According to Sagesoft, eight out of ten accountants recommend *Sage*. Someone at ACP suggested that that was because they don't know any better. So how does *Enterprise* compare with *Sage Sterling for Windows*?

To be perfectly honest there isn't much difference in what the two packages do: they will both do your accounts. The real difference between the packages emerges when you look at the user interfaces. *Enterprise*'s interface is brilliant. It isn't cluttered and is almost clinical in design. Everything is properly integrated so that if you do something in one module it can effect another straight away. In *Sage Sterling* only the standard modules are integrated so that if you have the Payroll module it will run separately. It also suffers from the terrible Windows interface that plagues all PC software. Having said that it *does* have one major advantage over *Enterprise*. You don't need a mouse.

Say you've just been given a pile of 100 invoices to type into your computer. In *Sage* you can type merrily for the next hour or so, and when you've finished one invoice pressing Ctrl-S brings up another. However, in *Enterprise* you're constantly swapping between keyboard and mouse to click on radio icons and so on.

Another complaint about *Enterprise* is that you can only put a password on the final accounts and not on the whole program. While this isn't too much of a problem, you'll be in a temper when your son's friend thought *Enterprise* was something to do with *Star Trek*...

The main advantage that *Enterprise* has over *Sage* is its ease of use. You *may* waste a little time using the mouse but you'll also save hours trying to work out how to use the package in the first place – everything is so neat and tidy. *Sage* seems to have hundreds of cluttered options everywhere from changing the screen colours to modifying what an address is called. For your convenience, all the nominal headings (in plain English: purchase/sale types, like 'material purchases') have an individual number or code. However, when you're typing in an invoice you *have* to type in this number – you can't type in what the number refers to. In *Enterprise*, while there are nominal codes, you don't have to ever use them. In other words if the nominal header is 'material purchases' and its code is 201; you can type either. Also, you can type an abbreviation, like 'mat' and it will automatically be expanded.

A number of features such as order processing, multi-company use, and network sales are not yet available for *Enterprise*. Therefore, if you are in desperate need of these features at the moment, then don't bother waiting for *Enterprise*, buy *Sage* with a PC. However, if you won't need them for some time, I would recommend *Enterprise*, if only because it costs substantially less.

Conclusion

I seem to remember commenting about the sheer number of accounting packages available for the Acorn platform in the November issue. That's probably because there are. Both ACP and Apricote Studios market a range of excellent accounting solutions. However, if you glance through some mail-order company advertisements you may notice programs such as *Arcounts Manager*, *Business Accounts* and *Account Plus*. So what do these programs have to offer?

Unfortunately, none of these packages even approach the sophistication and ease-of-use of *Enterprise* and *Prophet*. Nor do any of them multi-task. It's not that they don't account, it's just that, frankly, I don't think that anyone would want to use them. Apart from *Account Plus* (which is remarkably cheap) they are grossly overpriced for what you get. The PC world suffers from the same: a multitude of packages left over from DOS days that people only use because they were using them ten years ago. If you can't afford a good accounting package, use a spreadsheet or some paper.

The main question you need to ask yourself is should you choose *Enterprise* or *Prophet*?

Prophet is ideal for people who have no previous knowledge of accounting. If you run a small business, you're only doing the accounts because you have to (i.e. you aren't employed specifically to do them) and you don't need the power of *Enterprise*, take a look at *Prophet*. The soon-to-be-released *Prophet 2* will integrate with *Payroll Manager* and provide a solution that, possibly, even your kids could use.

However if you have a larger business and features such as customer label printing interest you, go for *Enterprise*. It is based on the same principles as standard paper book-keeping. It has all the features you would expect including audit trail, statements, profit and loss and trial balance. *Enterprise* is the most powerful accounting suite available for Acorn computers, and it provides flexibility as well as power. It's reliable, easy to follow and a joy to use. AU

Product details

Product: Enterprise range
Supplier: ACP Ltd
Tel: (01276) 472046
Fax: (01276) 451427
Prices (ex VAT):
- EasyMoney, £99
- Enterprise Accounts: Maintain, Sales, Purchase and Nominal modules, £199
- Enterprise Professional: Maintain, Sales, Purchase, Nominal, Stock and Mailer modules, £279
- Individual modules £99

Pros: Most powerful package around • Double-entry • Multi-tasking

Cons: Requires mouse • No company cars

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Access

Spring is in the air

It's nearly time for the 1995 Acorn User Spring Show, and this year's event is bigger than ever.



Crowds enjoying last year's show in Harrogate.

Back in 1993 the *Acorn User* Spring Show was born, and proved an immediate success. It's obvious that the number of Acorn enthusiasts in the North is considerable, and anyone who went to the previous two shows will be glad to know that the 1995 exhibition will be bigger and better than ever before.

The first show, in the smallest hall at the Harrogate International Centre, took up just 1200 square metres and attracted some 5000 visitors. The 1994 event took up 2000 square metres in the larger Hall C, and nearly 6000 visitors came and saw Keith Chegwin entertaining Acorn fans; the show was recognised as so important that Acorn launched the Risc PC there, bringing the launch forward so the public could see the machine before the summer.

The 1995 Spring Show is even bigger still. Taking place on Saturday 6th May and Sunday 7th May 1995, the show is still in Hall C, but Hall E is also in use for a dedicated catering and rest area, increasing the size of the show to nearly 3000 square metres, two-and-a-half times the size of the 1993 show. Expected attendance is more than 7200 visitors, which just goes to show that the Acorn market is alive and kicking.

What's on show?

Of course, the main part of any Acorn show is the large number of exhibitors showing off new products and plans for the future. Bookings for stands are progressing well, and you can expect to see anyone who is anyone in the Acorn market at the show. We'll be covering the show in detail in the May issue of *Acorn User*, when you can find out exactly who will be exhibiting, and what they'll be revealing to the public.

The popular theatre will be present again, with exhibitors demonstrating their products and techniques. The *Acorn User* team will be out in force telling you more about the magazine, so if you're curious about how we do things and what we think about the Acorn market, don't miss the theatre.

An innovation in this year's show is the Notice Board. On this board exhibitors can notify visitors of any special events or show offers of interest to them, so if you want to make sure you keep up to date with the latest developments, offers and competitions at the show, don't forget to check it out.

Acorn User competition

For those who have entered the *Acorn User* Education competition, as described in last month's magazine, the winning entries will be on display in a special gallery, next to the theatre.

If you're not aware of the competition, it's open to any school, and the brief is to design a page for *Acorn User*, using Acorn machines. The prizes on offer are astounding, with products from almost every leading software house up for grabs. We fully anticipate that the winners' gallery will be an interesting and informative read, and that we'll get some excellent ideas for the magazine from it!

On the subject of competitions, there's a fantastic competition open to everyone who attends the show. Everyone who visits the show will be given a draw entry card on arrival, and after filling out your details, the card should be handed in to the *Acorn User* stand. When the show closes the lucky winner who is drawn out of the hat – at random, of course – will win a once-in-a-lifetime trip aboard Concorde, courtesy of Goodwood Travel and British Airways. Goodwood Travel is well known for its 'Flights of Fancy' packages aboard Concorde to exotic places around the world, so this is an opportunity not to be missed!

How to get tickets

Tickets are priced at £5 for adults, £2 for children (under 16) and £12 for a family ticket, which will admit two adults and up to three under 16s. The show is open from 9.30am to 5.30pm on each of the two days, and is in Hall C of the Harrogate International Centre.

You can obtain tickets by writing to Safesell Exhibitions Ltd, Market House, Cross Road, Tadworth, Surrey KT20 5SR: cheques should be made payable to Safesell Exhibitions Ltd. If you want to buy your tickets by credit card, then you can do so by ringing the credit card hotline on (01737) 814713: both Visa and Mastercard are welcome. See you there! AU

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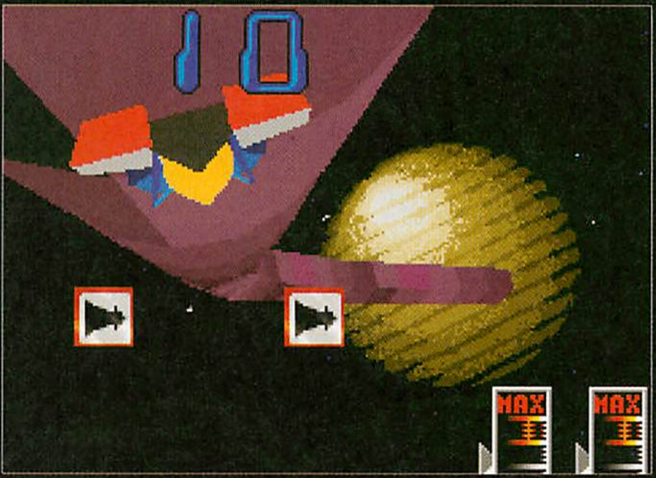
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GAME SHOW

THIS is the quiet after the storm. I'm writing this in January and already the supply of games has all but dried up. All the hype of Christmas will have either paid off, or broken some companies in two. Let's hope the Acorn market hasn't suffered any casualties, and let's all now look forward to a prosperous New Year which, by the time you read this, will be well under way.

Last month I did go on a bit about the standard of games packaging, and it's good to see that I can't really moan about anything this month. The selection of games reviewed this month would easily stand up to the dreaded PC comparison which seems to loom nearer and nearer to this column. I'll try and hold it off as long as possible to a time when I reckon enough people will have made a PC upgrade; then comparisons with the 'other side' will be directly relevant.

Heading the onslaught to games recognition is TBA who wins the People of the Month award for announcing its intentions to form a group of talented programmers to be called 'The Consortium'. This bunch of élite hopefuls will receive full technical support from the enthusiastic company as well as full access to the *Holograph* design tool.



If you consider that the world has largely ignored your crusade into Acorn games recognition or the company you represent is not doing the business, then you might well want to write to these chaps with a proposition. Send an example of your work or list of your achievements to: TBA Software '1995 will make me rich', Mead Farm, North Road, Timsbury, Bath, Avon BA3 1JH, or maybe you could phone (01761) 470003. It's good to talk.

I wish this venture all the best and trust my address will be top of the mail-out list for testers and reviewers. Here's hoping...

Steve Atherton

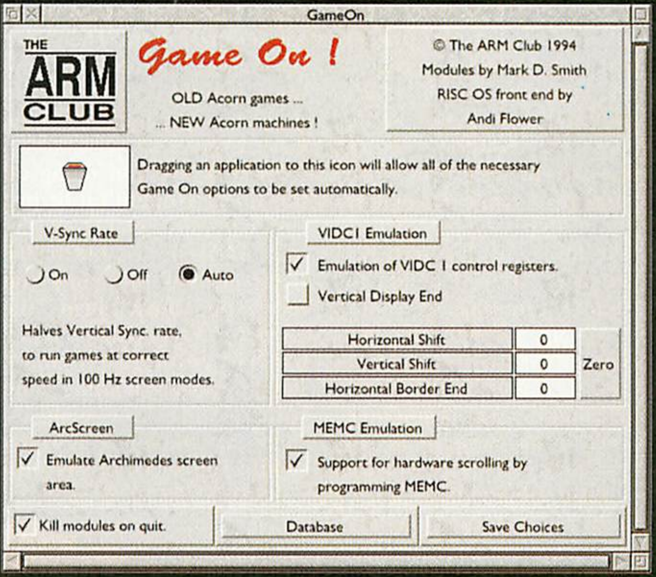
Game On!

Supplier: The ARM Club
Tel: 0171-624 9918
Fax: 0181-446 3020
Price: £10

Game On! is the program sought by all of you out there who bought a shiny new Risc PC, only to discover that your collection of games either didn't run at all or ran at an unplayably fast speed: the ARM600 certainly adds jet power to *Chocks Away*. Old games fail in a number of ways on the Risc PC, and *Game On!* fixes the most common problems. It emulates writes to VIDC1 control registers and MEMC DMA address generator registers – which cause the dreaded 'Abort on data transfer' on the Risc PC – puts screen memory back where many games assume that it is and provides a special 100Hz monitor definition file to allow proper display of 50MHz modes.

The last of these makes a huge difference. Most games run in 50MHz CGA modes, such as 12 or 13. The older Acorn monitors have no problem displaying these, but the AKF60 and AKF85 object to being asked to sync that low. Consequently, on a Risc PC these modes are usually bumped up to 75Hz and displayed in a 'letterbox' format, with gaps at the top and bottom and the wrong aspect ratio.

Game On!'s definition file cunningly restores them to the correct aspect ratio by inventing a new 100Hz mode and updating the screen twice as fast. It then traps every second VSync to stop games which rely on the VSync for timing from running twice as fast as they should. This improves the



At last – help for frustrated Risc PC game-players.

look of not only most games, but also any demos or *INFO utilities which run in low-resolution modes.

There's not a lot more to say. *Game On!* works, and does a job that all game-playing Risc PC owners will be incredibly grateful for. If I was Acorn, I'd buy *Game On!* off The ARM Club and bundle it with all Risc PCs; it will certainly stay on most hard discs longer than many of the freebies and it would make a serious dent in the product compatibility database. It doesn't just help with games either, but with other programs like *FasterPC* and *65Host*.

The list of what *GameOn!* does and doesn't fix is provided in a separate database, a copy of which is on this month's cover disc. Check this, and if *GameOn!* will be useful for even one of your programs, then buy it.

David Matthewman

Dune II, Battle For Arrakis

Supplier: Eclipse
Tel: (01243) 531194
Price: £34.99

If Eclipse still believed in Santa, then I bet I could guess what its Christmas wish was: 'Please, please, please can you put *Dune The Movie* on the TV so we can sell more units of the game over Christmas.'

Santa exists, you see, and so it came to pass. Two-and-a-half hours later the movie finished, and although it was the middle of the night, I felt inspired – no doubt like many others – to load up the game that had been sent for my attention.

Five minutes later, after a rather lengthy installation from no less than eight – yes *eight* – discs, I was sitting in front of 20Mb of compressed data, enjoying speech, artificial intelligence, 30 battle zones and countless other atmospheric features. To crown it all, there's not one sign of that wooden 'actor' bloke Sting: having seen his part in the film, I'd like to give *him* a message in a bottle. Flying through the air, preferably.

Dune II has been out on just about every computer format from Sega to PC to the Amiga. This means a couple of things: firstly a few hundred thousand happy users have already tested the game, and secondly the chances are I'm going to like it a lot. This has nothing to do with the fact that it's a PC game, just that only the best games get converted, and this is another gem from the other side.

The game is simple and yet at the same time – like all deceptively simple games – is very difficult. A bit like Draughts or Dominoes, I suppose. What you have to do is, in principle, quite simple: collect the main trading property of the planet Dune – Spice is what the stuff is called, and it's apparently some kind of drug – in competition with others, and create income for yourself. With this income you must buy technology. With this technology you must build protection for your ever-expanding colony. Then once reasonably protected you must build weapons to destroy the competition. Easy. Errr.

So why are you doing all this then? Wouldn't it be just easier to move planet or stay in bed? Well, yes, but in the true spirit of the game you feel you must help the Emperor Frederick IV repay his debt to the galaxy, and – though this has nothing to do with getting you going – there are fabulous rewards should you succeed. Needless to say there is nothing that much special about the planet Dune which, true to its name, has nothing much in the terrain department to offer. Except sand.

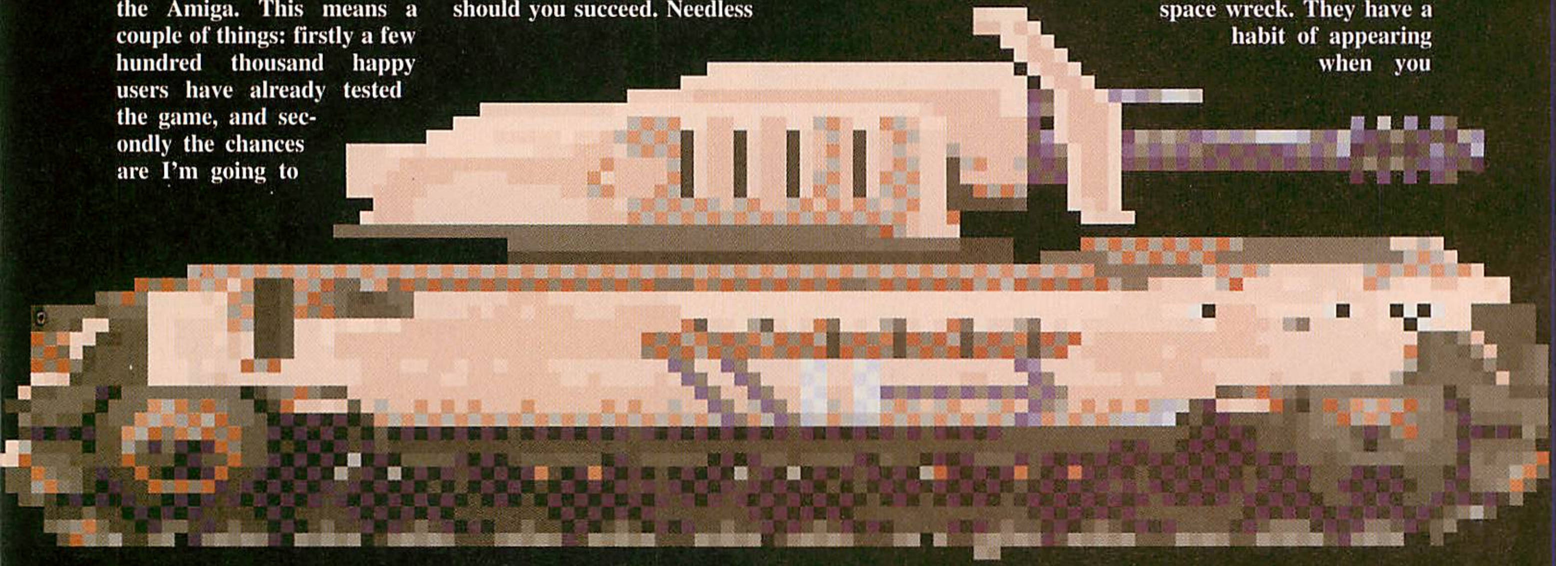


This guy is a Mentat, a sort of drug-fuelled human computer who can tell you all sorts of helpful hints. If you join House Atreides – the house which features as the main House in the books – then you get the friendly looking Mentat above as your aide. Don't get too excited, though. His name is Cyril.

Alien life forms

There are two forms of life on the planet, sand worms and Fremen. Sand worms are huge and swim through the sand, hidden from view until they appear, when they're pretty obvious given that they're monstrously huge. In the film they're the ones that looked like they were made out of squeezy tubes and a little bit of paper and glue – even at that time of night those special effects weren't special – and all you have to do is avoid them as they have a habit of eating any machinery left operating around. The worms are attracted to the vibrations through the sand, so careful how you tread...

The Fremen are a completely different kettle of fish; they are, as legend has it, descendants of the inhabitants of a mysterious ancient space wreck. They have a habit of appearing when you





This is what your base looks like very near the start of the game. Not a lot, is it? If you look at the 'radar' map at the bottom right, it's blank – because you haven't explored the terrain yet – and you haven't got many buildings in the tactical window: just a Construction Yard, in fact. You've got a few military units kicking about, but what you need to do is get building and get harvesting...



Now this is a bit more like it: loads of buildings, an expanding map of the surrounding area, more credits, and... oh... we're under attack. Well, what do you expect when you're doing so well? Life wouldn't be life without the odd intrusion, and besides, that's what the military units are for. So what are you waiting for? Defend yourself, amigo...

least expect them, so treat them with caution, i.e. blast them when you can.

As I said the planet surface has nothing much to offer except the unique substance called Spice, or 'Melange' in the local tongue. This reddish substance is rather handy in containing the powers of space warp for travellers, giving near everlasting life to those who consume it (most of the galaxy, by all accounts), and as a bonus it's a key to a youthful complexion. Sure beats Oil of Ulay.

Choosing your house

You must first pick a House to control, any one of three, and with this decision you will be assigned a Mentat (or advisor in normal lingo) who will give you the odd snippet of information to help you on the way. Each House is unique and with each House you will need a completely new set of tactics considering the wide range of weapons made available. My only advice to newcomers is to pick a House and stick to it so the tactics can be developed.

Once all the formalities have been dispensed with you can start with the task in hand. You are first presented with a Construction Yard and a few credits. My advice here is to get the Harvester into action and send it off to the nearest area of spice. During this time attempt to survey around your building area, which is the rock bed, and decide what building structure you will need and how easily you can defend it.

And there you have it. Or rather there you have a bit of it. I could explain the whole thing but I won't. I played this game from start to finish and although I had some advantage in playing the other formats, I still enjoyed both the slight differences and the challenge itself. If you followed my advice with *Flashback*, *Starfighter 3000*, *Wolfenstein* and the others I fell over about, then pop out and get this. The graphics are atmospheric, the sound effects are great and the gameplay is truly inspired. I really enjoyed myself with this so get a copy *now!* And the box is nice too.

Steve Atherton



Cyril – don'tcha just love this guy – giving you some of his friendly advice. Basically, this is Mentat-speak for 'go kick butt'. Just in case you hadn't guessed, House Harkonnen is full of ugly baddies whose only purpose in life is to get zapped to dust. That is, unless you've elected to join House Harkonnen, in which case I'm sure they're all very nice indeed...

Important Buildings

In the early stages you must build and maintain some simple structures. The enemy will not attack for a few turns so take this time to protect the Harvester from Worms and build a concrete base to the settlement. Walls will not be needed for a while but allow room for their construction. The important structures therefore for newcomers are as follows:

Concrete slabs

Very important if you want the structures that you will build on them to stay solid and resilient to attack. Always replace any damaged blocks.

Walls

Although not really needed till the attacks start in earnest, you must leave space for these structures when fortressing starts. Also keep in mind that later you will be adding cannons to the structure.

Wind trap

Essential. Without these structures you cannot power any of the facilities you might build. Protect these well, because if you also have an outpost built then the radar will go down on failure.

Refinery

By building a refinery you automatically get a harvester. The harvester is sent out to a spice area and after filling up it returns here where the spice is converted into credits.

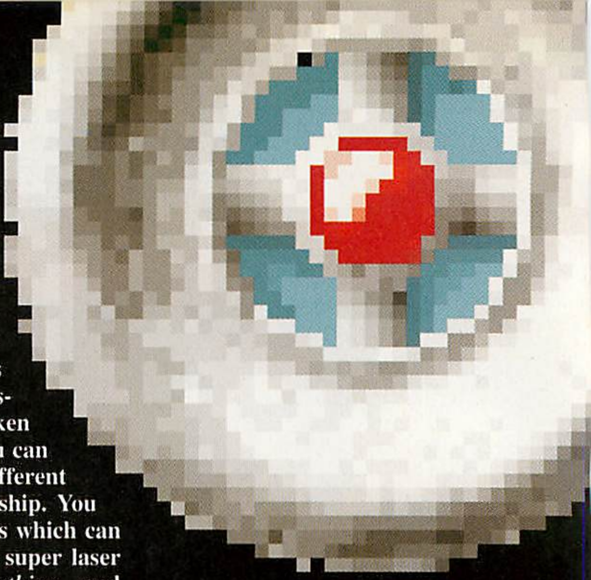
Spice silos

Complementing the refinery, these structures store the spice when the refinery can handle no more. Each silo structure, once full, will furnish you with 1000 credits.

Outpost

Essential for the radar facilities it can provide, the outpost lets you see through the void to any oncoming dangers. Don't forget that before any military installations can be built you must have an outpost.

Wavelength



Supplier: Gamesware
Tel: (01703) 456523
Price: £19.95

I have it on high authority that a certain individual named Tom Cooper is the author behind *Wavelength*. Now he's famous in my eyes for one thing, and that's *Hamsters*. Hamsters are not the cute furry animals little children have as pets; to Mr Cooper they're just an excuse for filling a screen with blood using a large mallet. Ha!

Still, Mr Cooper has now gone up considerably in my estimation with his latest game, a shoot-'em-up in the classic tradition which features some very carefully-drawn enemy installations and, at last, some interesting craft to blast to oblivion. Now I won't bore you with the plot as it really isn't important, but what *is* important is the fact that the small, perfectly-formed ship you pilot can do *serious* damage to anything you might see around you. To cap it all your natty little craft can be upgraded Halfords-style to a formidable-looking, well-trimmed, furry-seat-covered, Alpine-tree-scented, female magnet (or male magnet, depending on your outlook on life) that can *really* do serious damage.

Mission control

Just in case you thought it might be different, *Wavelength* is sectioned into missions, each with a set of goals you have to achieve within a certain time limit. No surprises there, then. The missions are quite similar in their appearance and basically involve you wiping everything and anything off the screen. Control is just a tad odd but you soon master it, giving you full directional control over your craft.

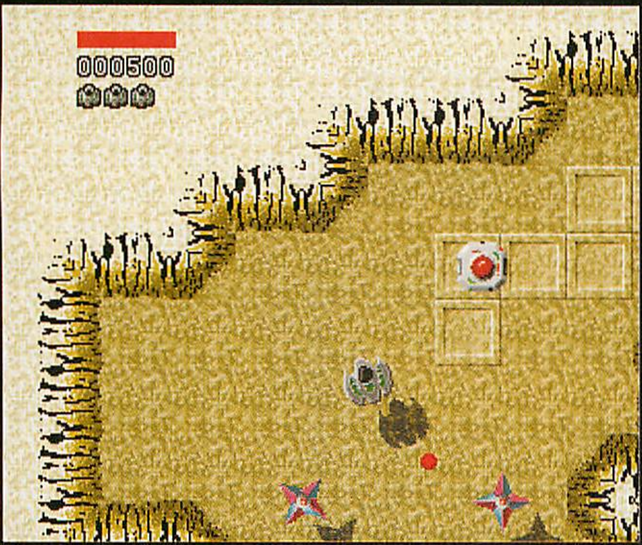
The ship in its default condition is fitted with a laser cannon for you to play with, and blasting buildings releases coloured tokens which you can collect for the ship upgrades I mentioned earlier. It's important to notice that if you want a particular weapon upgrading, you must collect a certain colour of tokens or the upgrades available will keep getting swapped around. The list of armaments you can buy is certainly impressive, and the token system means you can try loads of different variants of your ship. You can pick up lasers which can blast anything, a super laser which blasts *anything*, and even floating attachments like drones, gun pods or missile launchers which blast, annihilate and destroy absolutely *everything*.

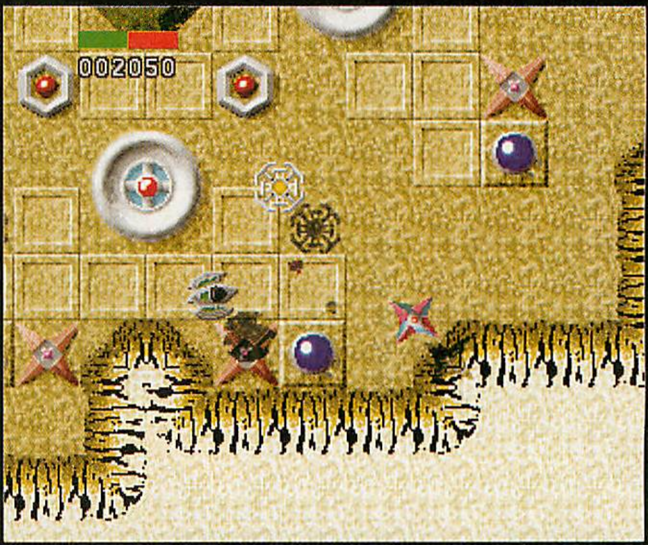
Keep collecting the same coloured tokens and the weapons become more and more powerful; keep at this and the ship achieves its maximum power as Frankenstein bolts of electricity shoot out at all angles at all things bad and threatening. As with all games of this type you have the obligatory Smart Bomb which sends dozens of warheads across and around the screen, destroying everything except yourself.

Wavelength is a very professional offering. It's got great graphics, superb effects, annoying music and just about every ingredient for a great time in front of the computer. Shoot-'em-ups are definitely in vogue at the moment on all formats, and it's nice to see the Acorn up there on the catwalk strutting its wares. Perhaps I should point out too that this game is strictly for shoot-'em-up fans, as it has some tricky controls to master, and if you're the sort of person who needs a sound educational reason for playing a game, then you'll have to settle for 'it sharpens the reflexes'. Then again, if you're the sort of person who needs a sound educational reason for playing a game, why on earth are you reading a review of a shoot-'em-up in the first place?

A final word. My version arrived as two discs banded together. Now it goes without saying that the release version that you'll be able to buy will have a lovely box and some colourful artwork, as although this package is competitively priced, this is a market place, and I'm on a crusade for finer presentation and not a 'garage creation' philosophy. Just in case you hadn't noticed.

Steve Atherton





Yeah, so it's a walk in the park to start with. Just a few enemy ships plodding around, trying to irritate you. But just you wait until the level gets harder: you'll be smiling on the other side of your face then, buddy. They come thick and fast in this game, you see, so it won't be long before you're too busy to admire the shadow effects, the smooth scrolling and the sound effects. Shame really, as they're excellent.

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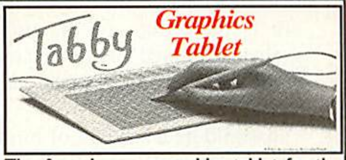
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Letters

Credit where it's due

Having recently become interested in articles reviewing new programs in computer magazines, I am disappointed to discover that very rarely, if at all, is the author of the program mentioned or given any credit for the work that he has done.

I would never dream of buying a book not knowing something about the author and his or her style of writing. In fact, knowing these things encourages or discourages me to buy more books by the same author.

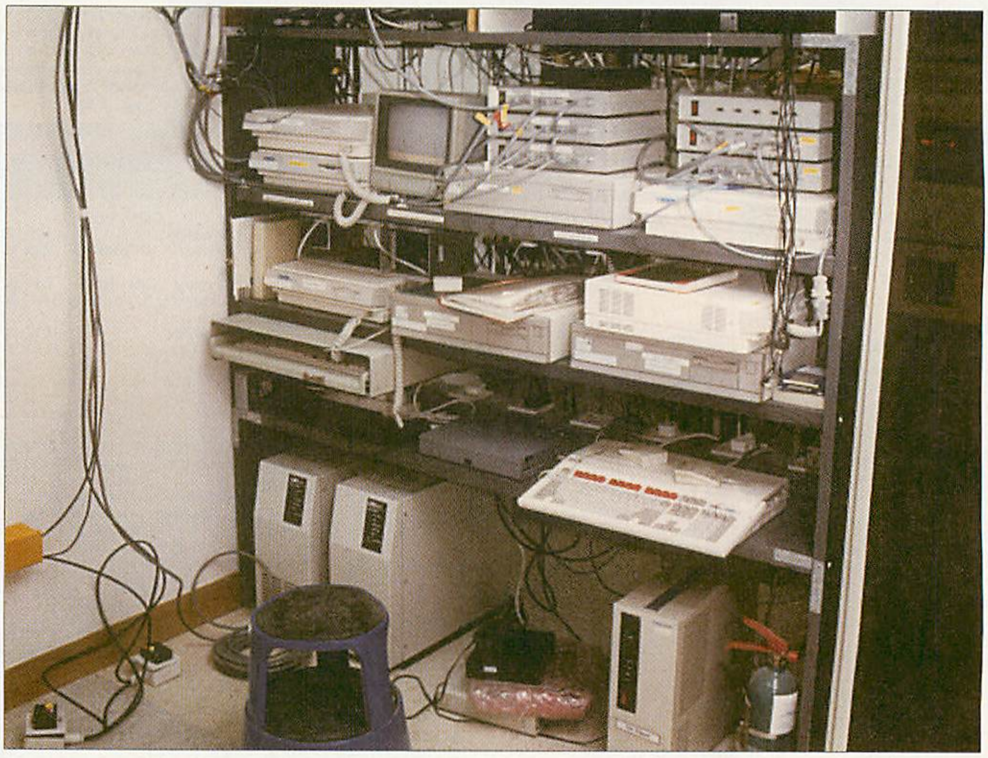
Wouldn't this also apply to computer programs if the author's name was at least acknowledged? It seems so unfair that all that hard work, perseverance and talent is given no recognition. Is there some reason why this is so?

I feel very strongly about this: in fact it is the first time I have ever written a letter to a newspaper or magazine.

Mary Skilling
Tunbridge Wells

What an interesting point. I'm not sure if the same criterium applies to authors as to software writers, as I can't imagine people wanting to rush out to buy Joe Bloggs' latest offering just because his last spreadsheet/database or whatever was well written. I would like to think that software which is not well written should be panned, rather than seen as the first in a string of applications from a certain author.

On a practical note, a lot of applications are written by teams, and quite a few aren't credited anywhere, so it's hard for us to publish the names. Besides, programmers are being paid for their work, so it's not all *that* unjust. (MM)



Oh, those good old red function keys...

OS or programming?

Congratulations, once again: the Christmas issue was another serious improvement on previous *Acorn User* issues, and I do like the revised layout.

The article giving a head-to-head comparison between *Impression*, *Quark XPress* and *PageMaker* raised some quite fundamental issues which are often overlooked. What actually constitutes a well-designed software package, and how much does that package rely on the operating system to gloss over its shortcomings, or conversely reveal them?

For example, for my purposes the inclusion of a button bar and OLE within *Impression Style* provides a very powerful package. But I would question just how user-friendly it actually is beyond those features which, by now, should be included in all serious software as 'standard issue'. And which would then, if virtual memory was also standard, make the Acorn desktop a wholly productive environment. Indeed, I wonder how *Impression* would stand up in comparison to *Ovation* if *Ovation* had these features.

Similarly, I am not impressed by packages which are substantially hyped on the basis of speed of redraw. I am very much more interested in the user interface, how long it takes me to complete a particular task, and how intuitive it is to accomplish. Surely, in certain respects, mere speed of redraw is not the prime criterium and is, perhaps, something which should be left to the extraordinarily high processing power of the latest RISC processors, rather than being the centre of attention in software design.

What I am saying is that *Impression* seems to depend on the desktop environment for its virtues rather than more than its inherent construction. Conversely, *Ovation*, which is underdeveloped to be sure, seems to lag behind because it fails to use the desktop interface to its best advantage.

Surely there should be a required standard of coding for the Acorn desktop which should be applied right across the industry, for OLE, drag and drop, virtual memory and so on? To the individual Acorn user software development does seem to be very fragmented, with much duplication of effort very clear in some areas, and seemingly little expenditure of effort in others. This must be to everyone's disadvantage.

Brian Bailey
Gloucestershire

Sounds like perfect fodder for a Viewpoint. (MM)

One bit slower

Regarding B Slater's letter in the Christmas 1994 issue.

If the memory was one bit wide, every bit would have an address, but it would take 64 reads to fetch a 64-bit word – very slow – so it is better to have the memory arranged in larger chunks (words). It would still require more than one read if the word crossed the word boundary but, even so, it would still be quicker.

But what about writing? If the data were aligned and occupied the whole word, there's no problem, otherwise the processor would have to read the old word before writing back the new, modified word: slower, but not too bad.

In fact, some processors, including the Pentium, allow arbitrary byte alignment, at the cost of slower access, but with a consequent increase in processor complexity, which rather contradicts the spirit of RISC.

Anyway, why have on-board registers? The TMS990 processor has a workspace pointer in the CPU which holds the address of the 'workspace registers' held in memory: I think the cache would have helped here. Alternatively, and

again with a cache, the processor could hold the addresses and lengths of a number of 'current variables' whose values would remain in the memory map (no problem with aliasing here), so V0 would mean the value in memory whose address is in A0 and whose length is in L0.

M R A Barnett
Cheltenham

Video quality

Since the release of the Risc PC, Acorn has given prominence to the enhanced graphical capabilities of the Risc PC over the past Archimedes A300/A400/A540 and A5000 machines, as well as other computer platforms, with the 16 million colour palette of the VIDC20 chip.

Developed at ARM Ltd, the 135MHz VIDC20 chip coordinates all the screen modes of the Risc PC, producing pixel rates at up to 110MHz in different frequencies. For optimum flexibility the VIDC20 provides on-chip a phase comparator and a programmable divider, which, coupled with an external voltage-controlled oscillator, generates all the necessary frequencies for any screen mode. But modes that use more than 3Mb of data and a refresh rate of 50Hz and over are not possible on the Risc PC due to some limitations of the various data rates within the VIDC20.

Consequently, to be on the safe side, Acorn claimed a 'new full-scale 1600 x 1200 resolution desktop', a screen mode which is used on 17in and, especially, 20in monitors. But when using 1600 x 1200 in 16 colours on a 2Mb VRAM machine, the maximum clock rate of the VIDC20, that is 135MHz, is exceeded, and quoting Dave Walker in the September issue of *Acorn User* 'it must be carried out at customers' own risk'. To add insult to injury, the VIDC20 is soldered to the motherboard and, hence, cannot be upgraded to future VIDCs.

So, if Acorn claimed that 1600 x 1200 is possible, why is Acorn now contradicting its previous declaration? For the set-top boxes a 165+MHz VIDC20 has to be used in order to support larger screen modes. Can't Acorn use the 165+MHz VIDC20 in the current Risc PC so as to give users access to more screen modes? Finally, with a 165+MHz VIDC20 and its improved data rate, is it possible to increase the VRAM to, say, 3Mb or even 4Mb?

Ruben Galea
Malta

Bad business

In your columns there is continuing and justifiable criticism of Acorn's profile in the 'business market'. However, Acorn is not helped by its dealers.

In one of the few magazines that supports different formats, Jim Nagel's pages in *Computer Shopper* stand out as a beacon in the ever-changing seas of the PC world. He continually extols the virtues and simplicity of Acorn machines, but can you find an advertisement for them? No way: not even on the pages of Watford Electronics, one of the largest advertisements, is Acorn mentioned. So how about the dealers putting their weight in raising Acorn's profile in the big wide world, as well as Acorn itself?

Also, why has Acorn dropped the red function keys from its computers? These gave them a distinctive look: just look at the photograph from Hong Kong on page 40 of the September issue [reproduced above]. When used in a visible arena such as TV they help to raise the profile of the machines: 'You know, the one with the red keys' or 'Hey! That's the one I use at school'.

D P Brooks
Swindon

If Acorn had retained the red function keys, people would be saying 'It's one of those old BBC micros. Are they still around, then...?' (MM)

Capitals or not?

Why does Acorn spell RISC in capitals when referring to the technology, but it calls its new machine the Risc PC? Talk about confusing standards...

John Stark
Cambridge

Viewpoint

It's a problem which has made cross-platform comparison of software more and more difficult as operating systems have developed: how many of a program's good points are down to the skill of the programming team, and how many are down to the functionality of the operating system?

Anyone who has used RISC OS, System 7 and Windows to any extent – and I mean to an extent, rather than dabbled – normally comes up with the same comments. RISC OS is the most friendly to use, and is the most flexible when it comes to using more than one program at a time: its multitasking and context-sensitive menu system are excellent, along with sophisticated drag-and-drop file loading and saving, drag-and-drop cut and paste (in a number of applications), and sheer speed of use. System 7 is a close second, as it loses out on its strange multitasking (where only the application being used can be seen at any one time) and its lack of real drag and drop (which is nearly there in System 7.5). However, it wins hands down in the virtual memory area, and has considerably better development tools than RISC OS.

Whatever the choice between RISC OS and System 7 – it's a close run thing for the vast majority of people – Windows, the 'industry standard', is always rated well below the other two. It's a pig to use, it's slow, and it makes mountains out of molehills most of the time. But it's got the best development tools by far: you can write complete, working applications in Visual Basic, without having to learn the intricacies of C or assembler. In fact, Visual Basic is *the* most popular development tool for Windows, and we don't have anything that comes close.

So how does this affect the link between the operating system and the quality of software which appears? Simply this: the software for the system with the better interface – RISC OS – lags behind on features, but scores on intuitiveness and ease of use. *Impression* is a dream to use, and even compared to *Quark* on the Mac makes magazine layout much more productive. Windows' interface sucks, but the features are there in the software. Where's *Paradox* for RISC OS? Where's *Lotus*, *WordPerfect*, *Works*, *Quicken*, et al? Even on the Macintosh these packages lag behind the Windows versions, and that's not entirely down to the fact that Microsoft has more incentive to boost Intel sales over Power PC sales.

The reason is, of course, down to money. Microsoft and its chums are richer than most people can imagine, and Acorn companies are extremely small in comparison. But they still manage to turn out the most amazing software, which runs at speed: an important factor, as you'll appreciate if you've ever tried using Windows on a 286 machine. This shows just what an excellent operating system RISC OS is. We've published criticisms of RISC OS, and its shortcomings, but bear in mind that this operating system implemented icon bars, drag and drop, printer drivers with icons you can drag to, menus which change depending on where you click the mouse and many other innovative features that were – and still are – ahead of the competition.

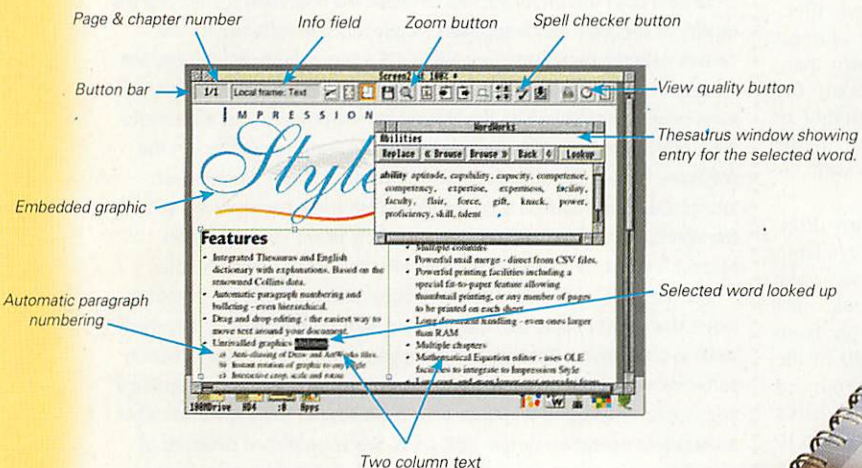
The down side is that RISC OS appears to have been standing still for some time. RISC OS 2 appeared over five years ago, and the upgrade to RISC OS 3, while cosmetically important, didn't change a *huge* amount. RISC OS 3.5 is aptly named: it's just an upgraded RISC OS 3 for a computer which can handle more memory, more colours and bigger screen modes. Our article in December's *Acorn User* about what we'd like to see in RISC OS 4 caused quite a stir at Acorn: apparently the number of phone calls to customer services went up quite a bit through people trying to find out if Acorn was going to implement any of the ideas raised.It just goes to show how important the operating system is to Acorn users.

Be honest: if RISC wasn't so trendy, would you mind if RISC OS was running on a Pentium rather than an ARM chip? Probably not, as long as we had its features. But, oh, for the development tools...

Mark Moxon

IMPRESSION Style

Impression Style is the newest word processor member of the Impression family, and the most comprehensive and powerful version so far released. Over the last few years Impression has become the most successful 32-bit Acorn software application and while Impression's DTP capabilities have been renowned, the fact is that most users use it as their day to day word processor. Impression Style is a major update, with special attention paid towards improving the word processing abilities still further, and making it even easier to use than before. So, for example, it now includes automatic paragraph numbering and



two sorts of on-line help amongst dozens of other improvements.

For those with technical writing needs it includes a mathematical equation editing utility and table building utility. For writers it includes what Archimedes World called "the superb WordWorks dictionary and thesaurus package." Other features that help make Impression Style a better text processor include automatic abbreviation expansion - one of the greatest time saving features available, drag and drop editing, an optional, configurable tool bar, along with firm favourites such as spell check as you type.



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REVIEW

Bobbin about

Geoff Preston looks at ways of outputting to fabric using your Acorn machine.

We've all heard of printers that output to paper, and even some that print to printing film, but what about machines that take computer input and weave, knit and embroider? In this article I'm going to take a look at all sorts of weird and wonderful machines from looms to electronic embroiderers.

Weaving

Joseph Marie Jacquard is thought to be the inventor of the first programmable industrial weaving machine – using a series of fanfolded punched cards, he controlled his massive weaving loom. Hung in Charles Babbage's drawing room was a picture of Jacquard at work on his punched cards. The picture was not, as many thought, an engraving, but was woven on a Jacquard loom using 24,000 linked cards, thus demonstrating the tremendous information handing capacity of the punch card system.

But someone had to set out, punch and check all those cards and it was nearly 200 years before the loom and benchmakers Emmerich (Berlon) Ltd eliminated the problem with a CAD/CAM system for weave designers. Unlike Jacquard's, these are shaft looms and there is a version for schools and colleges on which students can make a useful amount of cloth. By the time you've bought the hardware and software, and all the bits 'n' bobs you need to get started, you won't get much change from £3000 for the basic model, and for the cost of the top of the range job, you could buy a very nice car.

The Harris loom (a work of art in its own right) is operated by a single foot treadle, and the Weft insertion and beating up is by hand. The CAD program simulates the loom so that ideas of structure and colour can be easily tested and refined on screen. The results can be printed out for handweaving or the computer can control the Warp thread lift from the design software via a serial port controller.

A weave tutorial program is also available from Emmerich (Berlon) Ltd and is highly recommended. Although it's a BBC micro program ported onto the Archimedes, it is a fine tutorial which would gain very little by making it RISC OS compliant. If, like me, you don't know your warps from your wefts, or your heddles from your shafts, this is a good £20 worth of program.

8-shaft loom, £2700
(plus £100 for the software)
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Weave Tutorial program, £19.60
Emmerich (Berlon) Ltd, (01223) 622684



The POEM embroidery machine, which works with software from Commotion and TechSoft.

Embroidery

The POEM Personal Embroidery Machine is currently the only sewing machine specifically designed for computer control. Manufactured in Japan by Aisin Seiki, a division of Toyota, and costing over £600, this is a very expensive piece of kit (for £200 you could buy a hi-spec although non-computer controlled Singer sewing machine). So what do you get for all that money? Simply, a superb output device that will produce some very professional-looking embroidered badges and motifs which will greatly motivate students almost regardless of age, gender or ability.

In simple terms, if you produce a picture, POEM will embroider it. But before you run off with a fistful of money to buy one, a note of caution. In spite of the guards that are in place, and the doors which must be closed before the machine will run, it must be remembered that this is a sewing machine with a very sharp needle. Although the motor probably isn't powerful enough to drive the needle through a finger, it could inflict a nasty injury. This product requires supervision especially when working with very young ones.

There are two suppliers of software for Acorn computers: Commotion and Techsoft. There's not a lot to pick between them, and I use Techsoft because, although slightly more expensive, the program offers full control over stitch pattern.

With the Techsoft program, the picture you wish to be embroidered must be a *Draw* file.



The Harris 24in 16-shaft Mk II loom from Emmerich (Berlon) Ltd.

However, the software contains outlining algorithms which will convert sprites to *Draw* files and for Key Stage 1 and 2 students, this is by far the best option. If you do want to create a *Draw* file for the embroidery machine it is important you do not over-lay more than two colours or the machine will jam. The way the software works is to take the object at the back of the *Draw* file and embroider that first. It then takes the next object forward and then the next until it has stitched all the objects in the drawing. Techsoft is shortly releasing an enhanced version of the software which will not over-stitch and hence will automatically remove the possibility of jamming due to too many layers of stitching.

The question that always comes up is 'How many colours will it do?' I suppose the answer is strictly 'unlimited', although in reality every time a new colour is required the machine must be re-threaded. I feel it's unlikely you'll need all of the 16 colours the software allows for – three to six colours is probably much more realistic. Care should be taken to keep objects of the same colour together in the *Draw* file if possible, as failure to observe this simple rule could mean lots of unnecessary re-threading.

The working area is about 90mm square which is quite large enough for a badge or logo. The manufacturers are also quick to point out that brand name logos should not be used as the subject of an embroidered design. The material is secured in a special embroidery hoop or frame which connects to the computer controlled arm by a magnet. Space around the frame is restricted, so it's difficult but not impossible to find space for a whole garment which is being embroidered. Tee shirts are particularly troublesome as the tendency is for the back of the garment to shift into the path of the needle resulting in the back becoming stitched to the front.

The initial cost of the machine, it must be said, is high. Accessories are equally expensive. The machine is supplied with a pack of five wound bobbins for the under thread and three cartridges to hold the top coloured threads. To avoid having to install threads into the cartridges when a new colour is required, extra cartridges are a must. The threads themselves are also pricey but they do work better than any other cheaper type I've tried. Be prepared to spend a further £20-30 on these items and a really sharp pair of embroidery scissors. The best material I've found is felt, which can be purchased from most fabric shops: look out for bundles of offcuts. Calico with a backing of Vilene also gives good results although it is a little fiddly to get both fabrics into the embroidery frame.

POEM (inc software) £749
Coloured threads £3.75 for three
Bottom thread £1.90 for five
Techsoft, (01824) 780318

Knitting

My mother-in-law is an avid knitter. I'm frequently amazed at the quantity of wool she can get through when sitting in front of the television. Having never passed beyond cotton-reel and nails knitting (hands up all those who remember French knitting), I feel there is something really special about a hand-knitted garment that sets it aside from the mass-produced machine-knitted shop-bought items. It was therefore with some scepticism that I looked at computer-controlled knitting machines.

Clywd Technics produces the software and lead to connect an Acorn computer to a Brother 940 or 950i knitting machine. The software enables the designer to produce the most complicated patterns with up to 14 colours per row. Designs may be printed out as a knitting pattern or sent to the knitting machine.

The software allows the user to design and knit tiles of any size. Once a single tile has been designed, any number can be put together in any orientation to produce a larger tile. Files from other 'bit-mapped' programs can be imported and saved in *Techtile* format. I have to say, *Techtile* is basic in the extreme and feels as if it was ported from a BBC micro. I managed to crash the program several times simply by clicking on the wrong menu option at the wrong time. It won't run on a Risc PC nor will it operate with ICS' IDEFS filing system.

Apart from these criticisms, the software works well enough and produces what it's supposed to. All this program really needs is a RISC OS programmer.

Brother 940 Knitting machine (prices vary between suppliers)
Brother 950i Knitting machine (prices vary between suppliers)
Techtile Archimedes software £79.95
Connecting cable £89.95
Clwyd Technics, (01352) 741751 AU

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Acorn

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Easier on the pocket?

We've published reviews of Acorn's Pocket Book II before in *Acorn User*, and the conclusion is that the Pocket Book II is better in all departments, except price. But if you're thinking of equipping your school with a large number of palmtops, is the Mark II worth the extra money? Alice Smith investigates.

The IT industry, not unlike the car industry, does have a tendency to take last year's model, tart it up a bit and relaunch it as a totally new concept. However, this year's model of the Acorn Pocket Book has more than a couple of new safety features and a smart new paint job; while it is recognisably the same neat little palmtop computer, the Pocket Book II offers users, particularly those in education, a significantly different machine.

The new Pocket Book has a larger screen, which can display four times the quantity of text, and the resolution has been improved. Unfortunately for my fingers, the keyboard has not been enlarged, but I know that kids have no problem with it. ROM has also been increased to 2Mb, which must be a plus.

The applications *Write*, *Cards*, *Abacus*, *Time* and *Calc* are still built in to the Pocket Book II but in terms of new software there is OPL, a straightforward program editor which didn't interest me much, and a nifty utility called *World*. This is a sort of mini-atlas. Type in the name of a place and basic data appears on screen while its location flashes on a simple world map. Admittedly it's probably not sophisticated enough to be of much use in secondary geography lessons but it could be valuable at primary level, partly because children will enjoy playing with it.

There is still some debate over whether computerised spelling checkers are a good thing or not but the Pocket Book II has one on board along with, now, a thesaurus. My view is that anything which encourages students to investigate words and experiment with language is worthwhile, so this addition gets my approval.

The Pocket Book II has a record facility as well. This again is great fun to fiddle with but has a high potential nuisance factor and could prove a curse rather than a blessing in the classroom. You can use it to customise the alarm function, which is a nice gimmick, but although there must be an obvious educational application, I'm afraid I can't think of one. Recording snatches of bird song? Suggestions on the proverbial postcard please. Recording samples of a useful length also eats up memory which could cause management problems in the classroom.

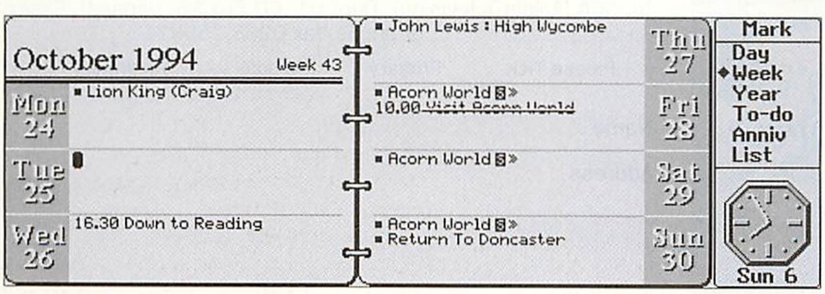
All these extras are extremely welcome enhancements but to my mind the Pocket Book II's major selling point is the graphing application, *Plotter*, which comes on a plug-in SSD (solid state disc) cartridge. This can handle Cartesian and polar functions, inequality graphs and co-ordinate pairs and effectively turns the machine into a graphical calculator, a piece of equipment which has fast gained favour in A-level and GCSE maths lessons but which has also been shown to have a place in the primary classroom, too. In short, it cuts out all that tedious graph-drawing which, with pencil and paper, is time-consuming and tends to become an end in itself, obscuring the mathematical point of the exercise.

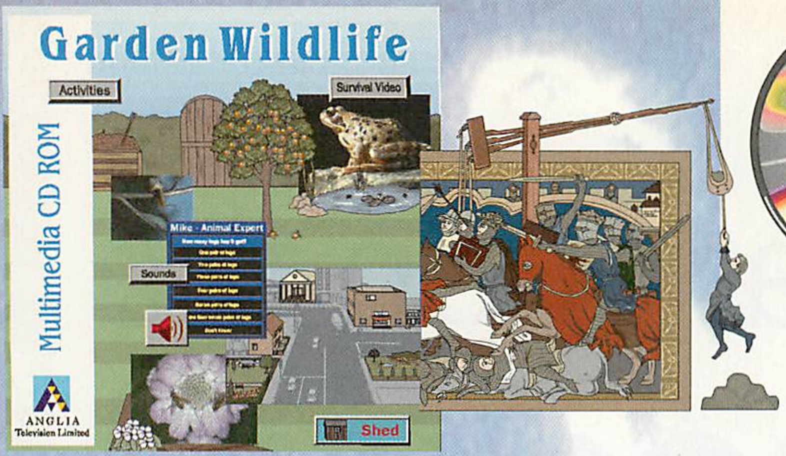
So what about price? The basic 256K RAM machine is £269.95 and the 512K version is £329.95 (all prices include VAT). However, at the time of writing, a class pack of ten original Pocket Books costs £1996.90. The same number of Pocket Book IIs is £2699.50. That's a difference of just over £700, for which you could get three and a bit extra computers. The older Pocket Books were due to be discontinued at the end of 1994 but you are bound to be able to get hold of them for the first few months of the new year so, given the option, do you buy old or new?

Well, in this instance, less is probably more because the better the machine, the more easily and frequently it's going to be used, even if it means the goal of one per child takes a little longer to achieve. In fact, with computers as with cars, if you can afford it, it's always worth going for the top of the range. There is still some way to go before palmtops make desktop machines obsolete, but if the Mark I Pocket Book was a hatchback, the Mark II is a saloon, and Acorn is getting there. AU

Spot the difference: the Pocket Book II has a larger screen and more memory, which makes programs like the diary so much better on the Mark II (bottom) than the original Mark I (top).







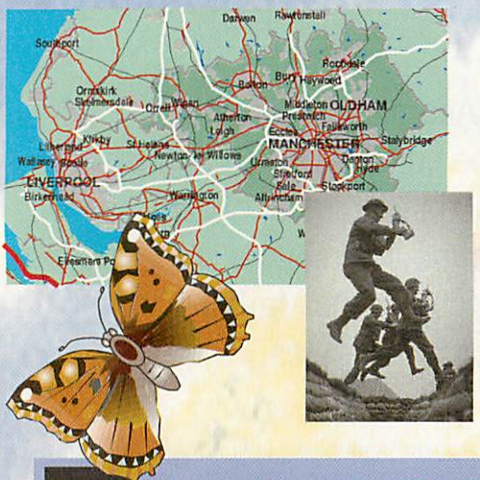


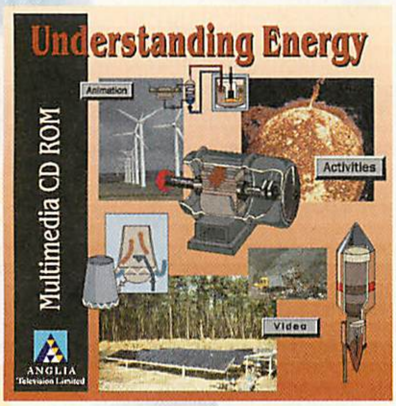
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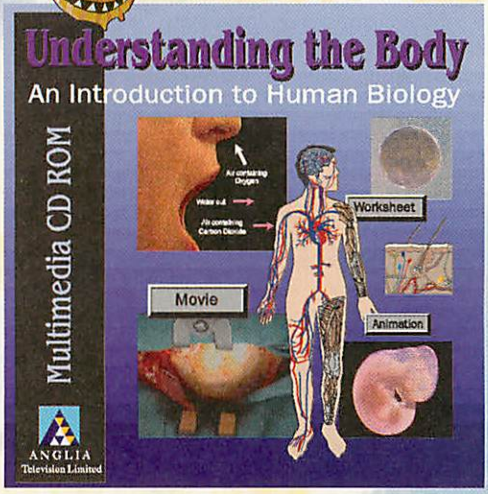
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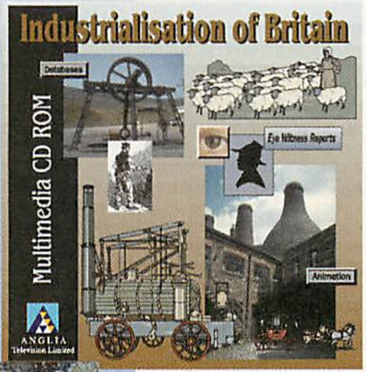
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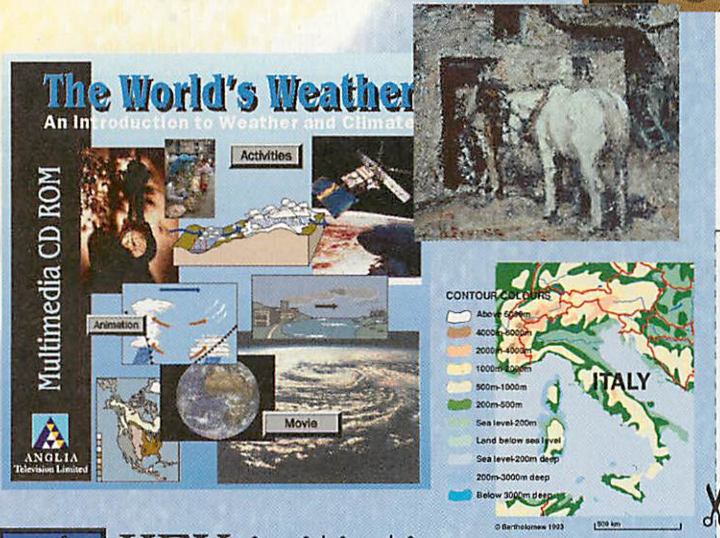
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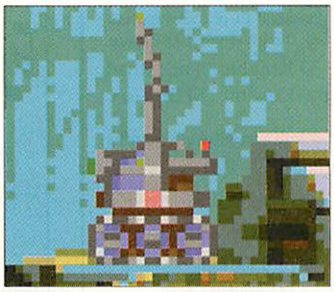
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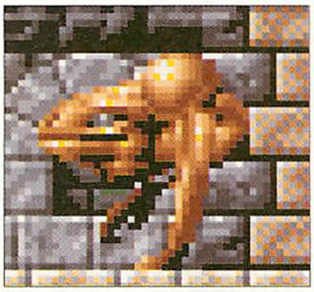
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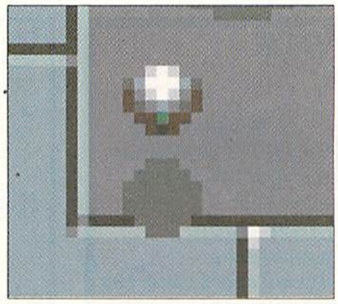
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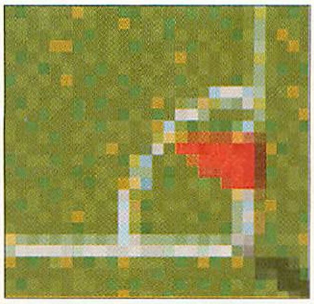
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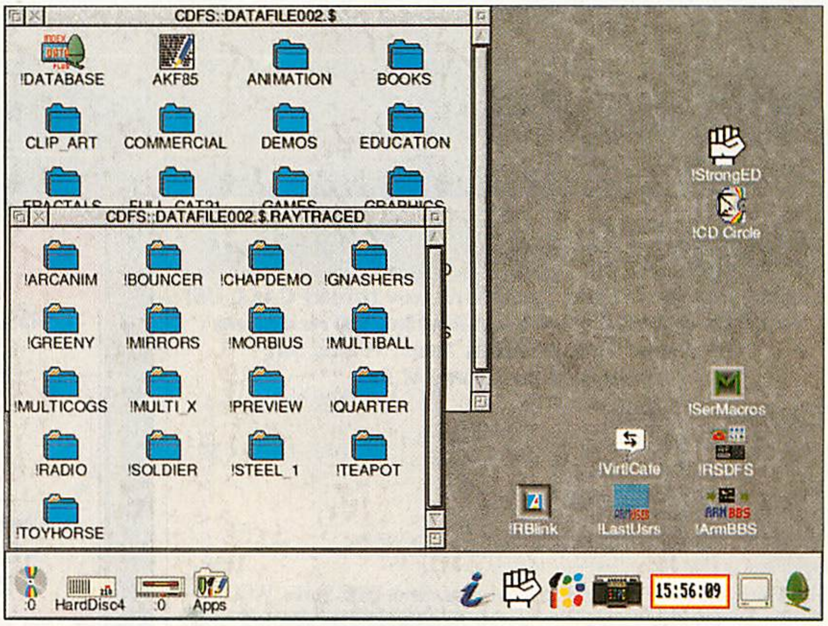
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Quality and quantity

Chris Jackson boots up the latest Public Domain CD-ROM, the PDCD 2 from The Datafile.

It only seems the other day that I was reviewing *PDCD 1*, and here I am reviewing the sequel, *PDCD 2*. This time round The Datafile has done all the organisation of the files itself, cutting out the CD Circle (although CD Circle members still get a good discount).

The big difference between this disc and the preceding one is that there is a lot more software: there are 420Mb of archives contained on the silver platter this time, compared to 250Mb on the previous CD-ROM.

Risc PC compatible

Risc PC users will be pleased to know that the majority of the applications work on their computer – every single demo and game I tried worked perfectly – and there is an extra directory with files that allow you to turn the cache off to slow the computer down so you can run games at a more manageable pace.

There are 22 sub-directories on the disc ranging from morphing to *Digital Symphony* tunes, and from educational applications to sillies, and all contain masses of files.

The slow access of the disc (which I complained about on *PDCD 1*) has been overcome by using archives on the disc; as they are seen as single files to the Filer, they are displayed much more quickly, and allow many more files to be placed on the disc. The only bad thing about using archives on the disc is that you need to watch out for those with an exclamation mark at the beginning of the filename – if *ArcFS* is configured to 'App archives', it will change all these to look like applications, and when there are nearly 100 in a directory, it can take quite some time.

The CD is accompanied by a fix disc, which contains two files that are corrupted on the CD, as well as a copy of *ArcFS*. This is rather silly, as the disc could easily have been checked for minor faults like this when in the recordable disc format, but I think that maybe the compilers were rushing to complete and turn out the disc. A manual acompanies the disc, and although I didn't find it particularly useful to navigate my way through the files, some people may find it makes the CD much easier to use.

Value for money

The content of the disc is very good; among the games is the well-known *Dinosaw* game, and a few old game demos, like *Top Banana*. The 'Education' directory is around 5Mb, compared to the 6Mb 'Sillies' directory. Over 22Mb of archived applications can be found in the three utilities directories, and I was surprised to see a few of my own PD applications in there. There is a large number of tunes on the disc in various formats, totalling over 150Mb (yes, that is one hundred and fifty megabytes) of data, ranging from opera to rave music, and most of it is of a very high quality.

The inlay card in the *PDCD 2* is now of a superior quality paper to that of the *PDCD 1*, and also the CD now has a side strip which makes it much easier to find in a drawer full of discs.

The database on the CD is still not interactive, so it can only be used to find if a certain application or type of application is on the disc, and its approximate whereabouts. The latest Datafile catalogue and ordering application can be found in a sub-directory.

Some of the files have been taken from Internet sites and BBSs from around the world, one example being an archive of 270 humorous files on various topics ranging from answerphone messages to betting. These are very amusing, and are definitely worth reading.

On the disc are over 400 excellent graphics files, which amount to over 70Mb, and they are ideal to include in DTP documents.

A PC Emulator directory can also be found, which contains a number of educational programs that will run under the PC Emulator, as well as a number of games.

Conclusion

I think that this CD may have been rushed to get it out into the marketplace, and maybe The Datafile should spend a bit more time checking *PDCD 3* before it is released, but two corrupted files, and the omission of *ArcFS* (which most Acorn users can find on every other disc in their collection) can be forgiven.

I have a dilemma before me now; I have to decide which disc to leave in my CD-ROM drive, *PDCD 1* or *PDCD 2*. I await *PDCD 3* with anticipation, even if that means an even bigger dilemma. AU

Product details

Product: PDCD 2 CD-ROM
Supplier: The Datafile
Tel/Fax: (01934) 823005
Price: £30 inc VAT
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Pros: Oodles of software • Similar structure to PDCD 1 • Archiving speeds up access

Cons: Non-interactive database

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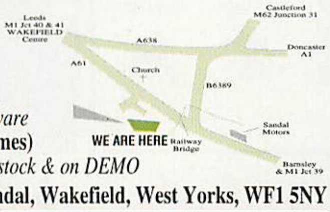
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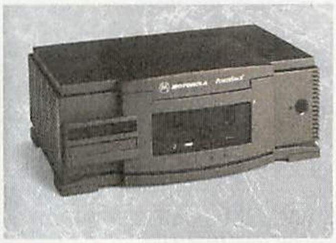
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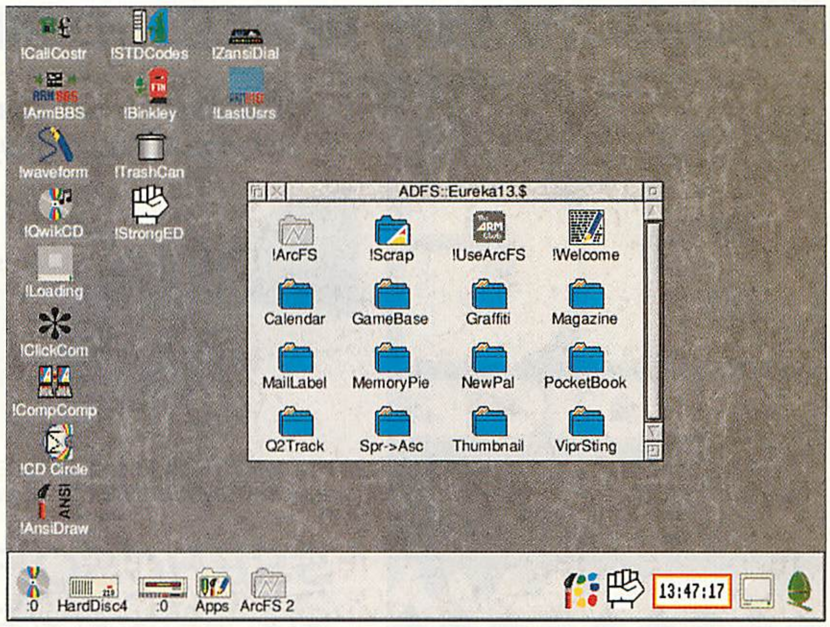
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Club Corner

Chris Jackson looks at the largest Acorn club in the country: The ARM Club.



The ARM Club's magazine disc is packed with goodies every issue.

This month in Club Corner I am going to look at The ARM Club, probably the largest club for Acorn users. It has been around for many years, and is affiliated to the British Association of Computer Clubs.

I received three recent club magazines, and have to say that I was very impressed with the contents and presentation. Being published quarterly the magazine does contain quite a lot of very useful information, but news stories can quickly become out of date, so five intermediate supplements are sent out between issues.

By becoming a member, you are eligible for discounts at 14 Acorn companies such as Gamesware, 4th Dimension and Iota Software. You are sent a membership card; a welcome letter; a contact list of other members living in your region who are happy for their details to be passed on; details of the discount scheme; and details about local ARM Club groups.

The club has access to information prior to it being released to the general public, such as the launch of the Risc PC, so the magazine which came out the day of the launch had up-to-date information about its capabilities. Simon Burrows, the editor of the club magazine, tells me that the magazine receives a lot of support from almost all Acorn-related companies. Recently, they set up a section of the club to promote and distribute software and hardware produced by their members: *TypeTutor* and *Game On!* are just two I could mention. Any money made from this is put back into the club to enhance the service and facilities offered to members.

One-day tutorials are run periodically by experts from the club who show members how to use certain applications, like *Impression Publisher* and *ArtWorks*. The tutorial I saw (based on *Paint*, *Edit* and *Draw*) was very good and written to complement the user guides, and would be excellent for a beginner. It assumes no prior knowledge of RISC OS, and there is a quick introduction to the mouse and the environment. This is supplemented with a glossary of the terms used in the tutorial.

A Public Domain library is run alongside the club, and copies of the discs can be bought for £1, which is much cheaper than any of the mainstream Archimedes PD libraries.

Open days are held throughout the year, where demonstrations of the latest software and hardware can be seen, and a 'Bring & Buy Sale' is hosted by the club.

A free technical help service is hosted by the club, where they promise to try to solve any problems by post, telephone or fax.

Formation of affiliated local user groups and area groups is encouraged, and the most active club is that in South Wales which regularly hosts meetings and has the greatest support from third party suppliers.

Conclusion

The ARM Club's membership is in excess of 1000, probably making it the largest Acorn club in the world. This has obvious benefits, the foremost being the large number of people you can contact who are also members. A possible disadvantage of the size could be that members would be known as a number rather than a name, but this doesn't seem to be the case, with the personal access available to members.

I wouldn't hesitate to tell someone about this club if they already know their Acorn like the back of their hand, but if you would like to talk to people in a less impersonal way about your computer, then I would say that you should also check out any local clubs (maybe even a local ARM Club group).

Contacting me

I would be interested to hear from any Acorn oriented clubs throughout the world. You can get in touch with me, Chris Jackson, by writing to The Club Page, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP, or by e-mail to: cjackson@digibank.demon.co.uk

AU

ARM Club details

The membership fee of £12 buys you five club magazines accompanied by five discs, five intermediate supplements discounts at various Acorn companies, a £5 discount (making it £20) for a day's tuition including lunch, refreshments and materials, and access to the club's PD library. If you would like to read a sample magazine, you can send £2 to The ARM Club, FREEPOST ND6573, London N12 0BR.

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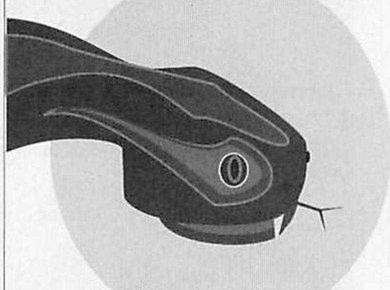
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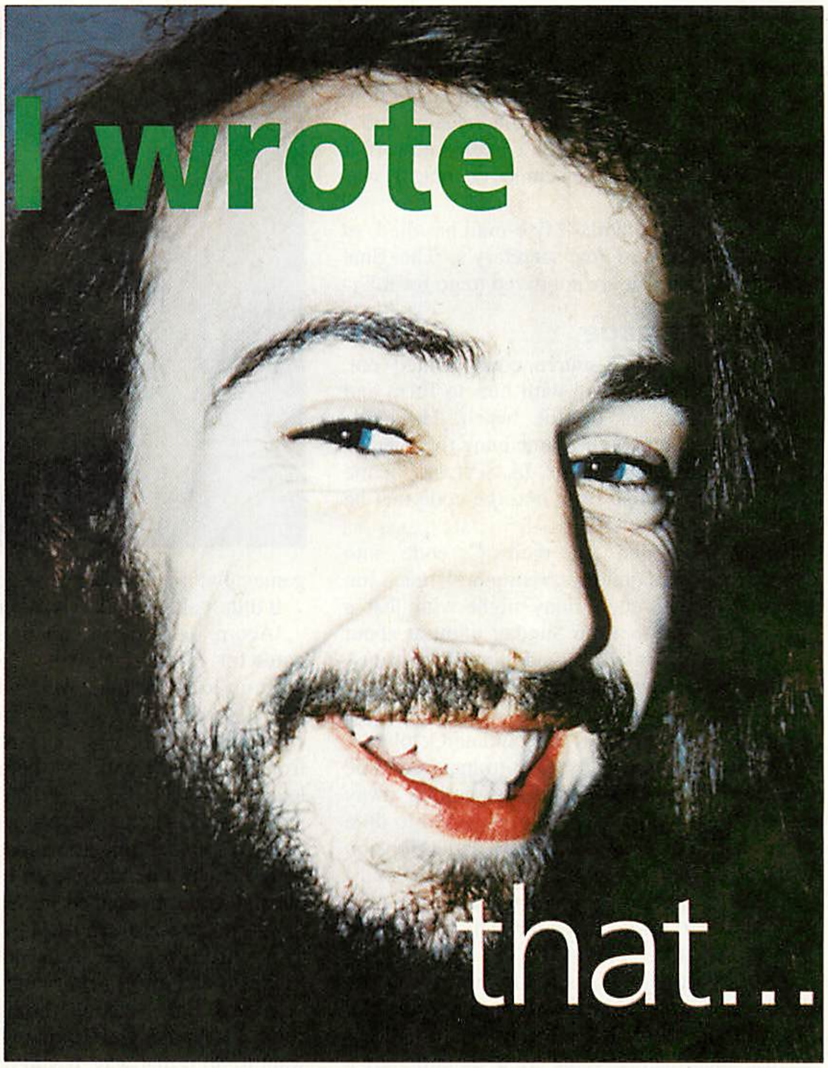
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I wrote that...



REGAN

David Matthewman talks to master programmer Eddie Edwards, the man who converted Wolfenstein 3D, one of the most popular PC games ever.

Eddie Edwards is not someone who sits back and waits for other people to write programs that he wants. When he saw *Wolfenstein 3D* on the PC two years ago, he decided that he wanted to play it. The only problem was that his upgraded A305 had the wrong operating system, but little things like that don't bother Eddie.

Early versions

'When I joined the Internet in July 1993,' says Eddie, 'I started taking the games groups on Usenet. When I asked how *Wolfenstein 3D* worked, they pointed me to some ftp sites where there were algorithms for ray-casting and for level editing. By the end of 1993 I had adapted them for the Archimedes.'

'Ray casting is quite similar to ray-tracing, in that you follow the path of a ray, but it's two-dimensional rather than three-dimensional, so you only actually perform one scan, and every wall sliver is symmetrical.

'In the source code I'd got the method from, they'd made a fundamental mistake in their perspective transforms. As a result, it actually looked really bad, because as you got close to a wall it began to curve. What they'd done is this; you're meant to transform using the z-coordinate going straight out of your eye. What they were doing was calculating the distance from your eye to the object, which isn't the same unless the object is directly in front of you. This made objects look curved as you got close, which was really off-putting.'

Eddie was spurred into further action by seeing someone else on the Internet write a very early demo of how *Wolfenstein 3D* could look on the Archimedes – it was both slow and suffered from the above curve problem. By this time, Eddie had a BASIC program which plotted texture mapped walls at a very respectable speed. To take it further, he turned to ARM code.

'I knocked up the main ray-casting engine in Assembler in just over a week, and that was finished on Easter Day in 1994. I spent some time getting it as fast as it would go – optimising the plotting code, which is really the main bottleneck. Then I started putting objects in, and started e-mailing people telling them that I was putting this *Wolfenstein* conversion together.

'In the end it *had* to be made into a game, because I'd come too far to have wasted all this effort. I had a choice; I could have done my own game, but it would have taken months to design all the levels, and I've got no talent in graphics.'

Talking to Id Software

Fortunately, Eddie also mailed Id Software – publisher of *Wolfenstein 3D*. He found that Id wasn't interested in making much more money out of *Wolfenstein*, having had a minor success on its hands with some game called *Doom*.

'Id said that it had ended up telling the Apple II GS people – yes, there were some people on the Apple II GS who wanted to convert the game – that they could have the licence for $10,000. I took it from his tone that the Apple II GS people hadn't actually taken him up on this offer, and I didn't have $10,000 lying around either, but it was still rather exciting.

'As luck would have it, as I left the building where I work, I bumped into the managing director coming in. I was all excited after getting the e-mail, and babbling about where I could get $10,000 from. He asked me what it was for, I explained, and he said "Well, why don't you come and talk to me about it?" I pointed out that I *was* talking to him about it, and he said "No, I mean come and *talk to me* about it." I finally clicked, and we worked out together that along with advertising and other costs I was going to need about £20,000.'

Eddie got the loan and sent off $10,000 to Id Software. The source code came back on an 88Mb Syquest cartridge causing Eddie to make his first investment in Powerslave software; a Syquest drive to read the thing. He also had to write his own DOS disc reader, since none of the Archimedes DOS disc readers would access a hard disc larger than 32Mb (mind you, nor would DOS until issue 5). Another investment was an A4 for Id Software so that it could test the game to approve it.

'I sent Id the aleph version, which was just my graphics engine before I got their code; it was static with no moving objects. They said "Well, it works – but you get a letterbox on the A4's LCD screen, and when you plug the VGA monitor in you don't get any signal at all." I put in this speculative fix which was using mode 49, a VGA-compatible games mode, but I didn't even know if the mode worked on an A4 or anything. I sent them the alpha and beta versions, but

because they were releasing *Doom 2* at the same point, they were so busy that they didn't get a chance to see any of them. The first thing they saw after the aleph version was the final version. This was two weeks before the release, and I was terrified because I didn't even know if it would work on their machine or not. I was waiting for the worst.

'Then I got an e-mail: "My e-mail has died, so I am forced to use my secretary's. The final looks great, and you are approved to go for it."'

Writing the code

When he got the C source code printed out, Eddie took it on holiday with him to Ibiza and read the whole lot on the beach. He made copious notes on how the game hung together, as he needed to integrate the Id Software game logic – menus and so on – into the code that he had already written.

'I hand-compiled all their C code into Assembler. It was quite surprising how much fun it was. I started one Friday night with just a blank maze, and then on Sunday night at about 4 o'clock I'd put in all the code for all the monsters and the game was completely playable.'

This was just as well, really, since this was August and the game was due out late October.

'The C code was really easy to hand compile and the only awkward part was getting away without the use of a maths library. I had to do a really precise distance calculation and a division because I had to form a unit vector. In the end I did a hack, where I divided by the larger of x and y, which made a vector which traced a square rather than a circle.

'The good thing about this is that the square that it traces is in octants, with one coordinate at 255 while the other varies from zero to 255. I can use the floating value as a lookup into a small arctangent table, and do a really fast and accurate arctangent where I can compensate for the inaccuracy introduced by the previous hack. That's what I use to calculate the angle that you have to spin to when you get shot by a soldier as it fades to red, which is actually one of the most difficult things that the game has to do.

'The monsters are treated as flat, texture-mapped polygons, which are always facing the player. When I do the scan for walls I also test to see if the ray passes through a monster. When I've finished doing the walls, I do a quick search to see which of the monsters might be visible. Then I get a linked list of them and transform each one. I form a z-buffer as I scan the line across, then just clip it against the z-buffer.

'The great thing about the BASIC Assembler is that you can compile the whole thing in one go. You can incorporate libraries using BASIC's LIBRARY command, you've got the most powerful macro-ing facilities in the world, and all you have to do when you've added some code and you want to change it is type RUN.'

In order to fit the code into a 1Mb machine, Eddie was going to be left with around 50K for the music, which was all Soundblaster format, totally alien to the Archimedes. His flatmate John suggested writing a Soundblaster emulator.

'I said yeah, right – an eight-channel FM synthesizer on the Archimedes in real time, you're joking! Then I wrote it, and it's in the game now; its very own Soundblaster emulator.'

It didn't all go smoothly, of course.

'Acorn said in its application developers' notes for games that a RISC OS 3 computer can have up to 696K free. Well, we tried this on an A3010 and couldn't get more than 630K, whatever we did. This was about three weeks from the release, and I was worried that I'd lose loads of my market if it didn't run on a 1Mb machine. I had this ARM2-specific code which compiled in real time into about 53K of memory, so in the end I had to bite on the bullet and take out this code; I resigned myself to the idea that the performance on an ARM2 was going to have to be dire. I took the code out, ran it with the cache off and it was *faster* without the code.

'Many times looking through the Id source code, I found myself thinking "No, you don't want to do it that way, if you do it like *that*, you get *these* side effects, and *that* bit of the game won't look quite right. So I went back and I played the game on a PC and saw that they *did* do it like that.

'The worst problem of all in the PC version, which my flatmate Dave noticed when playing it, was this: in some of the later levels there are loads of soldiers in large arenas to make it difficult to play. However, the engine was limited to only so many active players at a time and if there were more than that many it dropped them. This meant that you'd be confronting a whole load of soldiers, and then some more would come on the screen and some would randomly disappear – ping! they weren't there any more. The thing is that they were still shooting you, you just couldn't kill them.

'Amazingly enough, that could have been fixed just by changing one #define line in the C source code which fixed the number of monsters on screen at any one time. It was 50 in Id's, and I put it to 150 in mine.

'The one bug report I've had since the beta version is actually a bug that I put back in when reading the FAQ for the game. Under certain circumstances, the player and the monsters can walk through walls. This is a bug that some of the levels designed by *Wolfenstein* enthusiasts rely on, so it needs to be there.'

You have to admire a programmer when even his bugs are deliberate. AU



REGAN

Eddie Edwards' CV includes being in a rock band at sixth form – you'd never think it to look at him – and programming the *Dragon WIMP* package for the Dragon 64. This had support for text in a hi-res graphics mode and a pointer that didn't flicker, and sold 15 copies, making it a best-seller in Dragon terms. (If there are any Dragon owners reading this, Eddie would love to make it 16 copies.)

Eddie has converted such classics as *Jet Set Willy* and *Manic Miner* for the Archimedes, and for the past year has been obsessed with doing *Wolfenstein 3D*. Having done this, he is now obsessed with doing *Doom*, and is determined to pester Id until they let him.

Eddie works as a computer programmer for Data Connection. He programs his Archimedes – a highly upgraded RISC OS 2 A305 – in his bedroom in his spare time.

He doesn't ski-jump and he has never appeared on Wogan.

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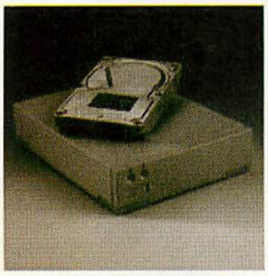
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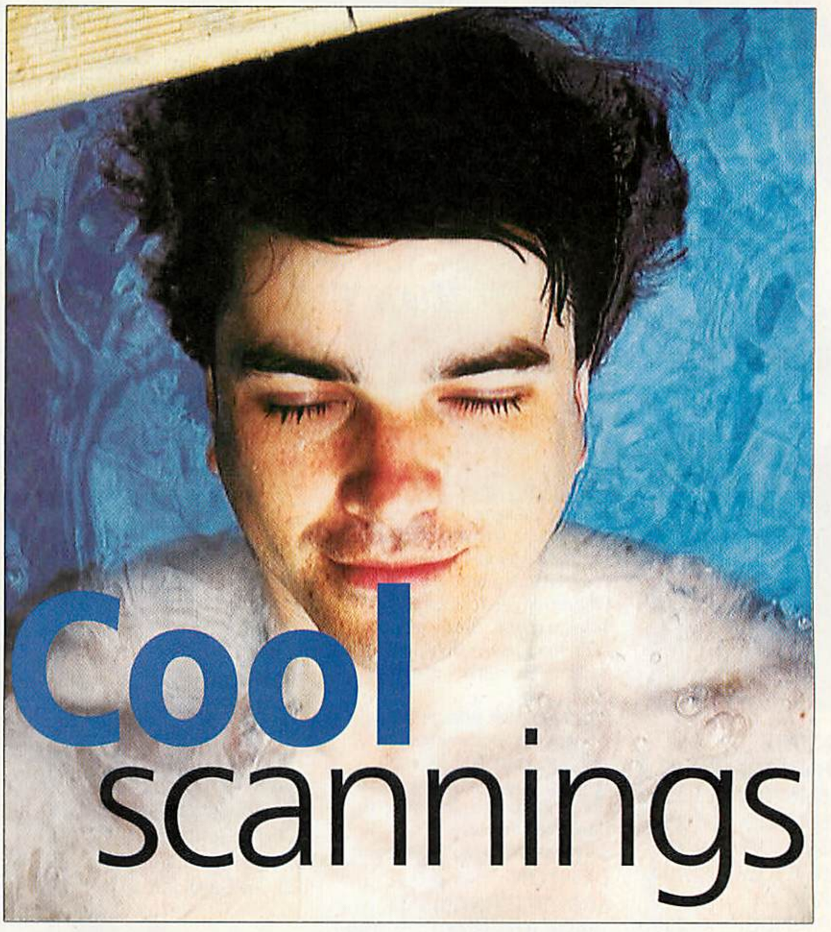
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Vita Regan puts the various 24-bit colour scanners available for the Risc PC through their paces.

In the Christmas issue I had a quick trip into what different kinds of scanners there are and how they work. This month I got to do the fun part: I actually laid hands on them and put them through various tests.

I like to think of a scanner as a copy camera, but without the fuss of film and the enviromently unfriendly chemicals and paper. A good scanner – like a good print – must be able to show detail in both the shadow and highlight regions and keep texture. For instance, when I scan a photograph of an object such as black velvet it should not appear as a black blob. Instead I should be able to see its texture and the subtle 'shades' of black that are there because of the way the light falls on it. If it can be done in analog (film) then I shall expect it to be done digitally (bitmap), otherwise why bother with 24-bit colour?

Connecting scanners

There are four ways to connect your scanner to your Archimedes, depending upon the type of scanner:

• Through the serial port. This is not recommended as this will be very slow due to the ammount of data you are going to be transmitting. Serial ports on machines older than an A5000 are often too unreliable for this method.

• Through the parallel port. This is faster than using the serial port but is still limited. If your computer is older than an A5000 then you cannot use this method.

• Through a dedicated interface card. This is basically fine, but works out expensive if you have to buy a card for every piece of external hardware, plus the insides of your computer are going to be a bit cramped.

• Through a SCSI card, usually using TWAIN. This is becoming the industry standard for scanners. The TWAIN standard was jointly developed by Caere, Aldus, Hewlett-Packard, Logitech and Kodak. It was first defined for the Microsoft Windows and Macintosh environments, and is now on the Acorn platform courtesy of David Pilling. It is similar in concept to the Acorn printer drivers and allows different scanning hardware to present a standard interface to any compliant software. SCSI scanners are fast, and can be connected to an existing SCSI card, though as always you should check compatibility.

The scanning resolution of a scanner is limited by the actual head of the scanner. Usually the scanning head has a CCD (charged coupled device) image sensor which looks similar to a long thin computer chip. It is the CCD which stores the levels of received light as accurately as possible. The CCD itself consists of thousands of photosensitive elements, and it is these elements whch mainly determine the resolution. For example, if the scanner has a maximum scan width of ten inches and the CCD contains 3000 photosensitive elements then the maximum resolution is 3000/10 = 300dpi. This is the maximum dpi that the *hardware* can scan at, but often software within the scanner will interpolate this to emulate higher dpi settings. The dpi in the other direction is usually determined by the motor on the scanning head.

The images used in most of the tests were 6in by 4in, and were usually scanned at 300dpi. On all the print scanners I used three standard pictures referred to as Hallowe'en (a baby in the devil's outfit), Barcode (a baby in a shopping trolley) and Sheep (the mystery picture on last month's Next Month page).

This detail from Barcode tests the resolving power of the scanner. The parallel lines on the strap will generate interference fringes if the scan is not sharp enough. The Epson GT9000 scanner with its 600dpi hardware resolution manages it easily.



CS300 colour scanner

Supplier: Integrex Systems
Price: £399.00 inc VAT
Comes with: TWAIN driver and *ImageMaster*

Pros: TWAIN device

Cons: Cannot scan stiff card • Has a tendency to scratch photographs

This is an A4 sheetfeed scanner, which means you can have an image A4 wide, with a length as large as your memory is capable of handling. Images you scan have to be thin enough to go round the rollers. In using it I found that my photographs were getting tiny suface scratches every time they went through the rollers, which is very undesirable.

The preview scan took 12 seconds and the final 52. When I looked closely at the cloak in the Hallowe'en picture, it was a solid black with no detail of the folds in it, even after numerous scans with different contrast settings. The scanner seemed to cope better with light images, with the Barcode scan being better as I could see the detail in the lighter areas.



The Hallowe'en picture, as scanned by various of the scanners. From left to right: (top) the CS300, the Canon IX-4015, the Mustek Paragon; (bottom) the Sharp JX-100, the Epson GT9000 and the Logitech ScanMan handscanner.

Mustek Paragon

Supplier: Castle Technology
Price: £449 + VAT
Comes with: TWAIN driver and *ImageMaster*

Pros: TWAIN device • Fairly cheap

Cons: Relatively slow

This is yet another generic-looking flat bed scanner. Its vital statistics are 36 seconds for a preview and 136 seconds for a final. Unfortunately the model I had for review gave an odd scattering of false coloured pixels, which I can only assume was a one-off, but which was very undesirable. The scanner did not give any detail in the shadow areas in Hallowe'en, though Sheep came up well. Overall this a very basic scanner, but it is reasonably priced.

Canon IX-4015

Supplier: Computer Concepts
Price: £749 + VAT
Comes with: TWAIN driver and *Photodesk*

Supplier: Beebug
Price: £644 + VAT
Comes with: TWAIN driver, *ImageMaster* and *Sleuth* OCR

Pros: Plenty of detail in the shadow areas • TWAIN device • Bundled with *Photodesk* (CC) or *Sleuth* OCR software (Beebug)

Cons: Does not scan transparancies yet

The 'Scanlight Professional Colour' from CC is really the Canon IX-4015, an A4 24-bit colour flat bed scanner which scans up to 400dpi (800dpi using interpolation). The preview took 11 seconds and the full scan 69 seconds. Results were excellent: on Hallowe'en there was detail in the cape and it was capable of coping with detail in the light areas on Barcode and Sheep.

Beebug supplies the same hardware as the CC scanner. The difference is in the software, and I feel that *ImageMaster* slightly has the edge, as I find it easier to use and more natural for initial scanning. Bundling the scanner with the *Sleuth* OCR package lets you scan text in and convert it to ASCII text for dropping in a DTP document, originally something of a gimmick but becoming more viable with ever-improving software.

In principle you can get a transparency adaptor for this model, which means you can scan transparent rather than reflective material such as slides and negatives, but this isn't available from either supplier as yet.

Sharp JX-100

Supplier: Irlam Instruments
Price: £449 + VAT (interface £75 + VAT extra)
Comes with: *ProI-mage*

Supplier: Beebug
Price: £419 + VAT (A5000 and A30x0 internal)
£429 + VAT (A30x0 external)
Comes with: *ChangeFSI*

Pros: Does not take up much desk space

Cons: Irlam's uses the serial port • Can't scan more than a 6 by 4 inch image • Poor colours and detail • Monumentally slow

This is called a 'Handy Scanner' and is a cross between a hand held scanner and a small flat bed. Basically you put the scanner on top of what is to be scanned, lining it up by looking through the glass top. It is a three-pass scanner and connects via the serial port on post-A5000 machines (in the case of Irlam's version without expansion card), or a special interface card (with the Beebug version, or for extra with Irlam).

Using the Irlam *ProI-mage* software, the preview took 80 seconds and the final took an incredible 20 minutes. The Irlam software allows you to do most of what *ImageMaster* allows, though I marginally prefer *ImageMaster*.

The scanner could not find detail in the darker areas of the Hallowe'en picture, nor were the colours it generated as natural as from the other

scanners reviewed here.

The software supplied with the Beebug scanner is in severe need of being updated. It has not caught up with the Risc PC and will only display 8-bit and not 24-bit colour. It will save a TIFF in 24-bit colour, but you have to open your picture into another package to view it at this level. This time – using an expansion card – the scanner took 38 seconds for preview and 22 mins 42 seconds for a finished picture. Because the scanner used a bundled version of *ChangeFSI* for converting TIFFs to sprites, it died with a 'No room for this DIM error' when scanning the 300dpi image: not very encouraging.

Epson GT9000

Supplier: Irlam Instruments
Price: £1175 + VAT (transparency adaptor £499 + VAT extra)
Comes with: *ProI-mage*

Pros: TWAIN device • Excellent quality • Will scan transparencies up to 5in by 5in with optional adaptor

Cons: Software cannot scan colour negatives

This is a large single-pass flat bed scanner with a maximum resolution before interpolation of 600dpi, and a 10 bits-per-colour channel. The particular model that I reviewed was connected via the parallel port, although it will also connect via a SCSI or SCSI 2 interface for speed. Even over the parallel port the preview time was 21 seconds and the scan time 190. The scans were very impressive, showing all the detail in both shadow and highlight areas.

You can buy a transparency adaptor for this scanner which sits on top of the scanner, which will allow you to scan slides and black and white negatives; colour negatives need complicated colour correction not provided by the software. The results are impressive – but at this price they should be. The Epson GT900 is an expensive scanner, but is worth every penny if you can afford it.

Logitech ScanMan Colour

Supplier: Irlam Instruments
Price: £359 + VAT
Comes with: *ProI-mage*

Pros: Inexpensive • Good scanning quality

Cons: Limited scanning area • Smooth hand needed

This is the only hand-held colour scanner which I looked at. With this scanner, the image is saved directly to disc as the scanner is dragged over the image, and it is then rendered from the data on the disc. This allows the scanner to be dragged relatively quickly over the image and makes smooth scans easier; the time for a complete scan was 2 minutes 38 seconds.

After altering the contrast and brightness controls I managed to get good detail in the shadow areas. In fact, this scanner was a surprise for me, being a good-quality hand-held scanner which was not something that I had realised existed.



The Epson GT9000, picking up detail in both the light and dark areas.

Nikon Coolscan

Supplier: Nikon UK
Price: £1495 + VAT (£1695 + VAT external)

Pros: Compact • Scans colour and b/w negatives and transparencies • TWAIN device

Cons: Limited to 35mm film • Film must be mounted

This scanner comes in two versions, one of which sits on your table top, and one which fits into the 5.25in bay of a Risc PC. It connects via the SCSI port and needs a TWAIN driver available separately from David Pilling for £20. Looking not unlike a mini CD-ROM drive, the scanner accepts mounted 35mm transparencies or negatives, holding them internally while it scans them.

Scanning transparencies at 300dpi produces a somewhat low-quality image. Fortunately, this scanner goes much higher than that, up to 2700dpi. A scan at 1200dpi giving an equivalent quality took 78 seconds for the preview and 9 minutes for the final. The results were well worth the wait, however. With a little patience setting up the scanner – you need to adjust the exposure and colour balance for best results – outstanding results can be achieved from slides and negatives. The results show excellent detail in both dark and light areas, always a problem with the higher contrast of slide film.

Other scanners

The scanners reviewed here may also be bought from a number of other sources: the Canon IX-4010 is available from Pineapple and the Epson GT9000 from CGS ComputerBild, for instance. Irlam also sells two cheaper versions of the Epson scanner which are worth considering.

Another scanner, which wasn't quite ready for inclusion in this review, is Iota's 24-bit A4 scanner based on the Microtek ScanMaker IIsp, costing £499 + VAT. We'll be taking a look at this system as soon as it's ready. AU

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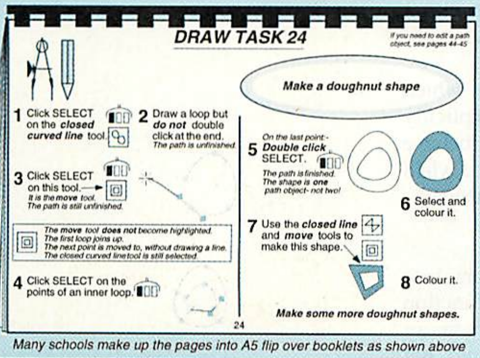
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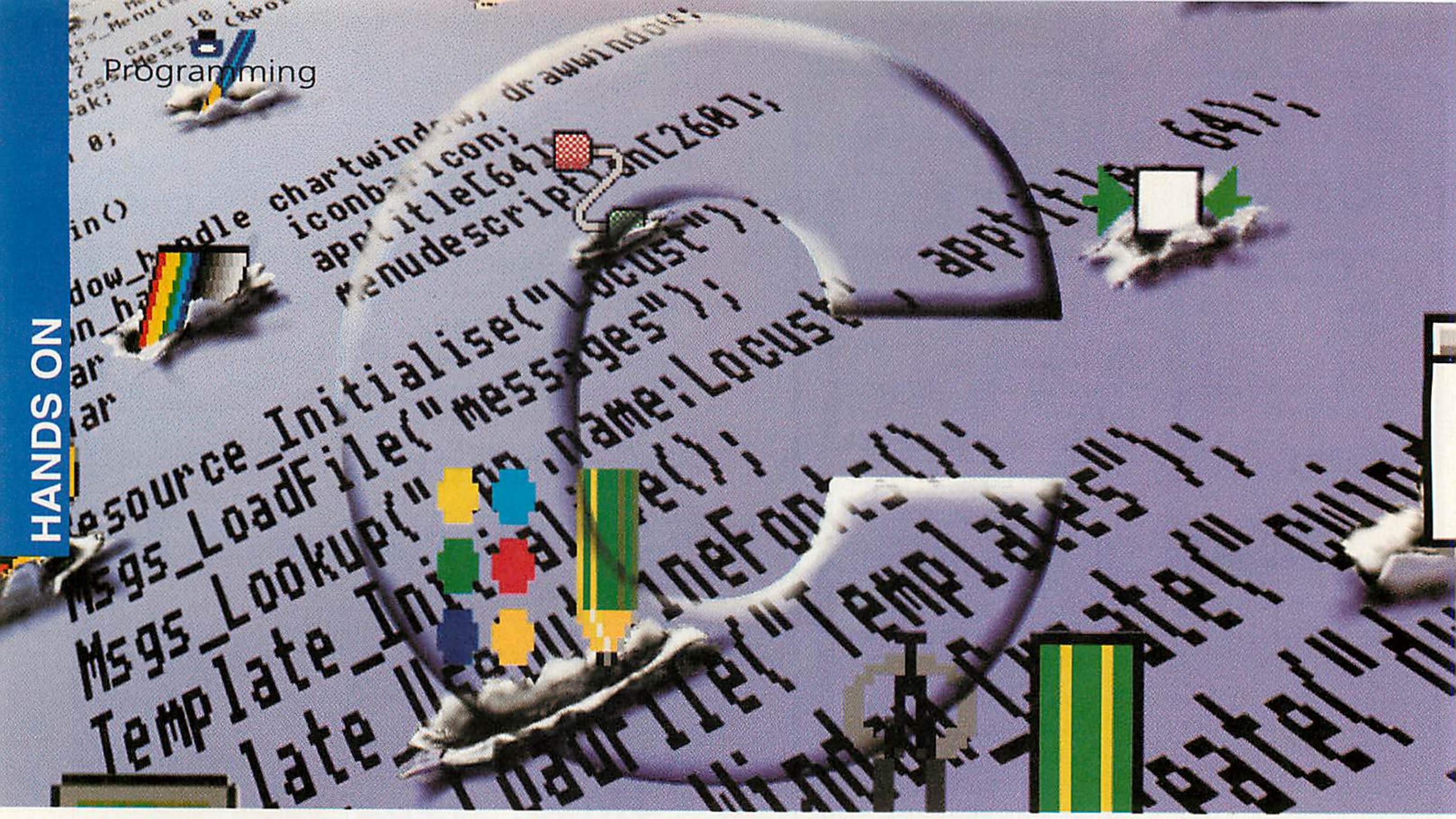
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JACK KREINDLER

C for yourself

Functions are the mainstay of C; all high level operations use them. David Matthewman explains how they work.

The C programming language depends upon functions to an almost unhealthy degree. As I explained in the first of the series back in August, C has very few keywords. There is no PRINT statement, for instance, nor a DIM statement. These operations are instead carried out by *functions*: printf() and malloc() respectively.

Functions, while they may look similar to keywords, are actually separate pieces of C code. When the program encounters a function, it jumps to that section of code, executes it, and then returns to whatever it was doing before. Functions can be in the same piece of code as the main program or in a completely different program. Both printf() and malloc() are part of the core library of functions provided by the compiler as ready-compiled code. Any compiler conforming to the ANSI standard must provide these and a host of other functions in a standard set of files.

Return values

Functions in C are similar to FNs in BASIC. They take arguments and return a value, although you don't need to use either. For instance, the printf() function returns the number of characters successfully output, a number which can be accessed by:

```
no = printf("Some text");
```

but which is not often of any interest. With the malloc() function, however, the returned value is all-important, being a pointer to the block of memory which it has reserved. Lose this, and there was little point in reserving the memory.

The fact that functions return a value leads on to the fact that they, like variables, have a type. The type of the function is the type of the returned value and can be anything that a variable can: int, char, pointer or whatever.

The return value is given in a return statement:

```
return whatever;
```

which leaves the function and sends the value of whatever back to the main program. You should usually ensure that a function returns *some* value, even if it is zero, otherwise the return value will be undefined which can cause problems if you accidentally refer to it.

This is not necessary with functions which have been declared void, as these are explicitly forbidden from returning values. These behave more like PROCs in BASIC and can be used when you are sure that no return value will be needed.

Passing arguments

Arguments are passed to functions in brackets after the function name. The malloc() function takes one argument which is the size of memory to be reserved. When a function is declared, not only does the type of the function have to be stated but also the types of all the function's

arguments. (There are exceptions to this, but we will ignore them for the moment.)

A function, then, looks like this:

```
function_type function(var_list)

{ var_type variable1

...

  statement1;

...

  statement 63;

...

  return some_value;

}
```

(Note that the initial line of the function definition does *not* finish with a semi-colon – conceptually, everything within the braces is part of the function definition.) The list of variables var_list is a list of variable declarations:

```
(type1 var1, type2 var2, type3 var3)
```

and so on, however many the function takes.

The return statement does not need to be at the end of the function, nor need it be unique.

All the programs that we have seen so far have actually been one single, special function, main(). main() is the first function called whenever a program is run, and every program must have a main() function. Strictly speaking, main() has type int and should return a value, usually zero to indicate no errors. This is because the OS running the program may check this value to ensure that the program has run correctly, and OSs which do this will complain if the return value is not defined.

The scope of variables

So far in C we have treated variables as though any variable can be used anywhere in a program, once it has been declared. This is because if we declare a variable at the start of main() we are free to use it anywhere within main(). However, functions outside main() cannot read from or write to the variable, it is 'invisible' to them and said to be *local* to main(). This is generally true; any variable declared within a level of braces is said to be local to that level, the level is said to be the variable's *scope*.

This naturally applies to the variables declared in the argument list of a function, which are local to the function. Even if the variable has the same name as a variable in main(), it will occupy a different address in memory and will be treated as a different variable. (Incidentally, this applies to other C constructions which use braces, such as loops and if statements which we shall cover soon.) This can often help – for instance you can use i as a general loop variable without checking that the program that calls the function does not use i as well – but can also confuse if you start using variables with the same name for different purposes. The *program* may be able to remember that they are different, but can *you*?

It follows from all this that a variable declared outside any function – including main() – is a *global* variable and can be 'seen' by the whole program. These may be necessary but are best kept to a minimum. Functions themselves are in effect globally-declared variables.

Fortunately, the compiler will usually detect if you declare a variable 'twice' when you shouldn't, for instance by declaring a local variable in a function with the same name as a global variable.

Listing one

```
char error = 'n';

int add(int x, int y)
{ int result;
  result = x+y;
  return result;
}

int subtract(int x, int y)
{ int result;
  result = x-y;
  return result;
}

int multiply(int x, int y)
{ return x*y ;
}

double divide(int x, int y)
{ if (y == 0)
  { error = 'z';
    return 0;
  }
  return x/y;
}

main()
{ int arg1, arg2, sum, difference, product;
  double dividend;

  arg1 = 20; arg2 = 15;
  sum = add(arg1, arg2);
  difference = subtract(arg1, arg2);
  product = multiply(arg1, arg2);
  dividend = divide(arg1, arg2);
  return 0;
}
```

An example

Listing one above – reproduced in an extended version on the disc – shows how functions can be used. The listing contains four functions – add(), subtract(), multiply() and divide() – as well as main(), of course. Note that each function has a type, generally int, but double for divide() as it may not return an integer, and each takes two integer arguments. All the functions refer to these arguments as x and y, but each has its own 'private' versions of x and y, so that they don't interfere with each other. The opposite is true of the character variable error which is visible to all the functions in the program as the same variable. This is because it is declared at the start of the program, outside any function definitions, at the 'zeroth level' of braces in the program. It is used to flag a 'divide by zero' error in the divide() function.

Note also that the multiply() and divide() functions avoid using the extra result variable by doing the calculation within the return statement.

Next issue variable passing will be looked at in more depth. AU

On the disc

This month, the cover disc has an extended version of the *Arithmetic* program, whose listing is given above. This program demonstrates use of simple functions in C, and should in no way be taken as being a good way to implement adding, subtracting and so on in C. It's actually a very silly way of doing it, unless you happen to be trying to illustrate how C functions work.

Questions & answers

The choice between SCSI or IDE, more tips for a faster boot file and frequently asked (and answered) questions.

Q I wonder if you can advise me about upgrading my Archimedes A3010? I want to fit a hard disc and my son also wants a MIDI link to our Yamaha keyboard. At a later date, I may well also want to fit a CD-ROM drive.

I have been told of various options, but I am unsure which represents the best approach for my system. I do not want to take a route at this point which will close off other possible upgrade routes in the future. The options appear to be based on the use of the HCCS multi-podule system:

• HCCS multi-podule with IDE hard disc interface in one slot, MIDI interface in another and one slot free. The hard disc would be an IDE internal type. Future CD-ROM expansion could then be via the free slot or, failing that, using the Cumana drive which uses the printer port.

• HCCS multi-podule with SCSI interface in one slot, MIDI interface in another and one slot free. The SCSI hard disc would then have to be external – no problem – and the CD-ROM could then attach via the SCSI link, as could any further hard drives and so on.

The IDE route looks the cheapest, but the SCSI route seems more flexible.

I do have some queries, though. Does the multi-podule system affect performance or cause any problems with RISC OS? Are there any problems in having a SCSI system disc, as opposed to IDE? Is performance likely to be better with SCSI than with IDE? Is the performance of the CD-ROM drive likely to be better with one option than with another?

A J Snowden
Knaresborough

A **You are probably correct to choose the HCCS system, although Cumana does a very similar system which might also be worth considering.**

Running the CD-ROM from the printer port is a reasonable alternative to having it on a dedicated expansion card or running off a SCSI interface. There is also a printer port SCSI interface sold by Atomwide, although I suspect that this would be too slow for your needs, being slower than an interface card.

The multi-podule system should not affect the performance of RISC OS; it should integrate very smoothly with it. Both SCSI and IDE hard discs are equally good to use as your system disc – again, you should have no problems at all. The SCSI system should be faster than the IDE one though this difference in speed will probably be fairly marginal. The CD-ROM drive will run at a similar speed off a dedicated expansion card to the speed that it would run off a SCSI interface.

The key question here is one of expandability. In your case, you are obviously keen to be able to expand your computer further, which suggests that a SCSI system would be the way to go. You will then be able to run hard drives, a CD-ROM drive, a scanner, a tape streamer or other backup system, an optical drive and so on all off the same card. This would leave other expansion slots free in the machine for non-SCSI devices; in your case the MIDI expansion board. Although the IDE solution will provide some spare slots, you will not be able to add as many devices as you would with a SCSI interface.

This is a general rule which holds for upgrading any Archimedes, not just the A3010, though as the A5000 and Risc PC come with an IDE disc fitted, you don't have the same initial choice with these. Even so, a SCSI expansion solution may be the answer – you can get an IDE CD-ROM drive for the



The A3010 – expandable, if you know how. But should you go down the SCSI or the IDE route?

Risc PC but once you have fitted it, that's your second IDE expansion slot gone.

Any lucky A540 owners already have SCSI fitted.

Advice given

Here is yet another tip on speeding up boot sequences. The two programs are on this month's cover disc.

Back in the March 1994 issue of *Acorn User* in Questions and Answers someone asked about what to do about their machine taking ages to boot up. Recently I found an alternative solution which your readers may be interested in.

The basic idea is to do all the initialising in the background. The boot file is reduced to the absolute minimum needed to start the desktop properly (loading *ToolSprites*, the backdrop, patches and so on) and a background application is started that just reads another boot file, sending the commands to Wimp_StartTask, and calling Wimp_Poll in between. On my computer, I now have desktop control in about 5-7 seconds where previously it was about 30 seconds, and that's including installing some unnecessary gizmos.

The boot process actually takes a bit longer than not doing it in the background, but at least the machine can be used throughout the process.

The most time consuming things in a boot file are usually all the Filer_Boots, loading applications and installing fonts, and since you don't normally need these immediately after booting up there isn't usually a problem with them 'appearing' a bit later.

BackBoot is the short program which does the work. It is just a stand-alone BASIC program, not an application. I put it in my *!System* directory and run it as the last thing in my *DeskBoot* file.

You should also create an obey file for *BackBoot* to get lines from. You must then move as many lines as possible from the original boot file to the new obey file. *BackBoot* should be passed the name of the obey file, for example by:

```
Run ADFS::4.$.!System.Back
Boot $.!System.Scripts.Bac
kBoot.
```

Note that the Wimp_PollIdle parameter in *BackBoot* can be changed to trade off desktop responsiveness and speed.

As for the fonts problem, *BackFont* is another short program that does font initialising in the background. It relies on an arrangement suggested in *Acorn User* to split fonts into sub-directories to facilitate having more fonts than ADFS allows in one directory.

Don't use *BackFont* if you have a font filing system such as *EasyFont* or *FontDir*, or if you only have a few fonts. You shouldn't need to use it in these circumstances anyway.

BackFont works by Font_Installing each sub-directory of *$.!Fonts* that it finds, calling Wimp_Poll in between. For this reason it works best by having several small(ish) directories where each one can be installed quickly. It could be modified to install each font set individually by fiddling with the search code.

I hope this helps some Acorn users out there,

Richard Hudson
rick@actrix.gen.nz

FAQ list

The Internet newsgroup comp.sys.acorn regularly carries a FAQ, or Frequently Asked Question list, in order to provide a general set of answers and stop the newsgroup from being flooded with people asking the same question over and over again. The FAQ provides a useful source of answers to questions, many of which have been asked in these very pages in *Acorn User*.

For this reason, the FAQ is reproduced on the cover disc of this issue, by the kind permission of Philip R. Banks, e-mail p_banks@kosmos.wcc.govt.nz, who maintains the FAQ. AU

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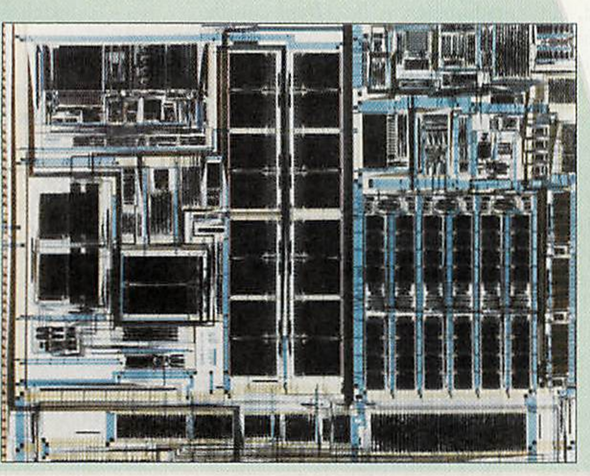
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Acorn customer hotline

Essential information for all Acorn users, compiled by Dave Walker of Acorn Customer Services exclusively for Acorn User.

Questions and Answers

Q. I need to know if a certain product works on my Risc PC. Where do I find out?

A. Your best route is to ask the vendor of that product. Of the products Acorn has tested, over 95 per cent work without modification. Of the remaining 5 per cent, many of the software houses have since produced newer versions which work correctly. A large percentage of the incompatible software is games; problems running these pieces of software are commonly connected with screen modes. *Game On!*, a utility to patch some of these games, has recently become available from The ARM Club, FREEPOST ND 6573, London N12 0BR.

Postcards from the edge, part 2

Another item (although not an Acorn product) showcased at Acorn World was *RiscBSD*, a UNIX-lookalike for the Risc PC. *RiscBSD* is based on the *NetBSD2* source tree; *NetBSD2* is a lookalike of *BSD 4.4 Lite*.

The source tree is, I'm assured, a pleasantly clean one; all the CPU-specific code is in separate directories, so it's merely (!) a case of porting the specific stuff to an ARM directory, fixing the Make files and then (hopefully) typing 'make'. Of course, life is never that easy!

The system on display at Acorn World was a very, very alpha kernel. So far, everything is built via cross-compilation using gcc under LINUX; the *RiscBSD* team hopes to have native compilation very soon. Actual coding had been on-going for six weeks prior to Acorn World, so considering that every core member also has either a job or a degree to do, they have done a fine job so far.

The multi-coloured square on display was built to show off the process system; one process was moving the square, another was changing its colour, and there were two more changing the orientation and colour of the bars in it to reflect CPU state.

In addition to *RiscBSD*, there is the *ArcBSD* initiative, which aims to provide (again) *BSD 4.4 Lite*, but sourced from the *FreeBSD* tree. *ArcBSD* is being written with the explicit brief that it must be executable on all 32-bit Acorn machines with sufficient RAM and hard disc space to make support of BSD viable.

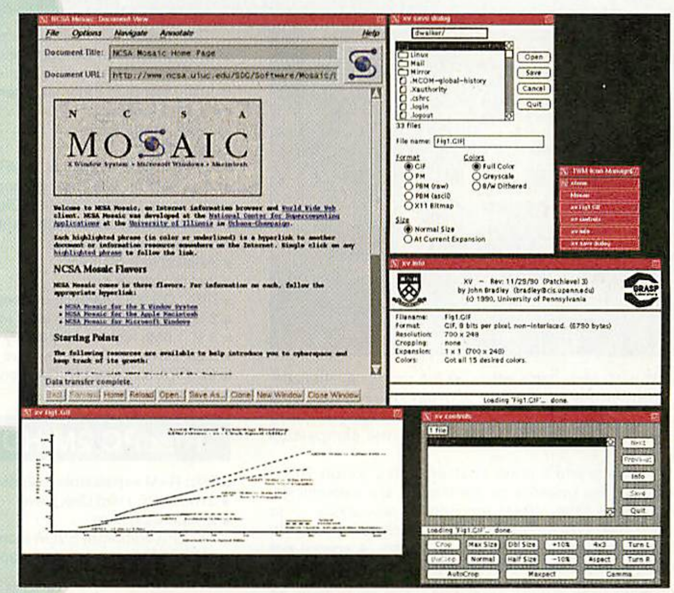
Further details on the progress of these projects can be found on the comp.sys.acorn newsgroup; details of mailing list contacts for further information are usually included in these postings.

Directory viewers

Everyone is familiar with double-clicking Select on a file, directory or application. However there are actually a number of other things you can do as well (some of these are not present in RISC OS 2.00):

Double-Click Adjust: As for Select, but the directory viewer closes.

Single-Click Select: Select this object, de-select any others.



***RiscBSD*: a UNIX-lookalike in action on a Risc PC.**

Single-Click Adjust: Select this object, adding it to any others already selected in this viewer. Also de-selects a selected object. In effect, it toggles the state of this object.

Menu: Selects the object under the pointer if nothing is selected

Shift Double-Click Select: Open a directory or application. Load a file into *Edit*.

Shift Double-Click Adjust: As above, plus directory viewer closes.

Ctrl Double-Click Select: Open a directory or application. Don't run any boot files.

Ctrl Double-Click Adjust: As above, plus directory viewer closes.

Drag to icon bar: Load the file into the application you dragged it to, or run the file if you drag it to a vacant part of the icon bar.

Shift-Drag to an open *Edit* window: Insert name of object(s) dragged.

You can also select a number of objects which are adjacent in a directory viewer by starting a drag near the first (make sure that the first object is *not* selected by this) and then dragging the box to enclose all the objects you want selected. On releasing the mouse button all these obects will be selected.

Finally, don't forget the menu option to Select All.

It can often be quicker to drag a box round more objects than you want (or Select All) and then remove the ones you don't want by clicking Adjust.

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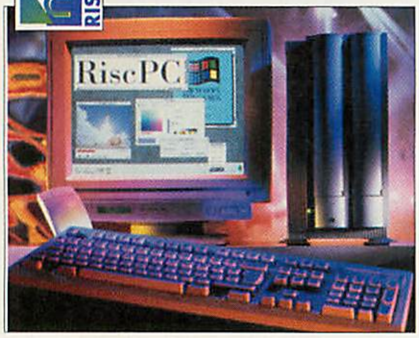
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Watford Learn & Play Pack

Pack includes: 10/10 English, Number, Spelling, Early + Junior Essentials, Virtual Golf, Dungeon, Break 147, Haunted House and E Type II.

Buy any Acorn Computer, Hard Drive upgrade or CD Rom Drive during January and we will supply the above Pack for only £45.

Multimedia Systems

Enter the world of multimedia with the RiscPC CDi system. Gain access to the massive amounts of data on CD ROM, study the masses of text, pictures and sound all interacting with each other. The ideal tool for educational use.

CDI System Specification:
- Dual speed CD ROM drive
- Aries Stereo Speakers
- 14" Multiscan monitor
- Hutchinson Encyclopedia CD
- Sherlock Holmes CD
- Really Useful v2 CD
- Acorn Video Clip CD

CDIA System Specification:
- Dual speed CD ROM drive
- Audio Mixer
- Aries Stereo Speakers
- Hutchinson Encyclopedia CD
- Sherlock Holmes CD
- Really Useful v2 CD
- Acorn Video Clip CD
- Pro Artisan v2 CD

- **5M CDI System** £1579
- **9M CDI System** £1849
- **5M CDIA System** £1629
- **9M CDIA System** £1899

Publishing Systems

One of the main uses of the Acorn RiscPC is Desktop Publishing. Utilising its immense processing power and high quality graphics, you will be able to produce professional quality documents without having to spend a lot of money.
The system comes supplied with the highly acclaimed Artworks graphics package and the powerful Impression Publisher DTP software.

Specification:
- 4Mb or 8Mb RAM expandable to 256Mb
- 1Mb VRAM for enhanced graphics
- Full support for 24-bit graphics – 16.7 million colours
- 14" Multiscan monitor as standard
- Impression Publisher DTP software
- Artworks graphics package

- **5M Publishing System** £1469
- **9M Publishing System** £1759

Acorn Pocket Book



The truly personal computer. With built-in word processor, spreadsheet, database, spell checker and scientific calculator, it provides all the basic tools for recording ideas, notes and data.

Pocket Book 256K Computer	**£165**
Pocket Book II 256K Computer	**£219**
Pocket Book II 512K Computer	**£269**

Pocket Book Accessories

A-Link	£40.00	Plotter Class Pk	£250.00
Parallel Link	£25.00	128K RAM Disc	£49.00
PC Link	£59.00	256K Flash Disc	£59.00
Mac Link	£65.00	512K Flash Disc	£85.00
Schedule	£16.00	OPL Editor	£59.00
Schedule Class Pk	£160.00	Mains Adaptor	£12.00
Plotter	£25.00		

0% Finance
available on all basic RiscPC systems, A4000 systems and A4 Notebooks. Call 01582 745555 for more details.

Acorn 32-bit RISC Computer Systems

A3010 Special Offers

A3010 Action Pack
includes computer with 1Mb RAM, expandable to 4Mb, Startwrite word processor, Zool game and demo versions of Lemmings, Fervour, Chuck Rock and Superpool.
only £249

A3010 Early Years
includes computer with 2Mb RAM, expandable to 4Mb, Talking Startwrite word processor, Gemini, Doris the Dotty Dog, Amazing Maths, Flossy the Frog, Mouse in Holland and Paint Pot.
only £319

A3010 Learning Curve
includes computer with 2Mb RAM, expandable to 4Mb, Acorn Advance integrated software suite, PC Emulator with DR DOS 6 and 8 demonstration versions of popular programs and games.
only £329

FREE Shoulder Bag with every A3010



Computer Systems

A3020 2M FD System + AKF52 Monitor	£699
A3020 2M HD System + AKF52 Monitor	£839
A4000 2M HD105 + AKF52 Monitor	£839
A4000 2M HD210 + AKF52 Monitor	£869
A4 4M HD60 Notebook	£1599

Upgrade Options

Upgrade to AKF50 Monitor	£120
Learning Curve Software Pack	£39
Home Office Software Pack	£85
Early Years Software Pack	£39

TO ORDER CALL OUR SALES HOTLINE 01582 745555
or FAX YOUR ORDER on 01582 488588

CD-ROM, Multimedia, Scanners & Monitors

CD-ROM Software

Some titles require additional software to run under RISC OS. These are marked as follows:
EB–Electronic Books: PaperOut software required
PD–PDSView software required

• PDSView	£99
• PaperOut – Electronic Book player	£49

Art, Graphics & Design

• Artworks v1.5	£169
• Artworks Clipart CD v1	£19
• Artworks Clipart CD v2	£19
• Art in the National Curriculum	£75
• Pro Atrisan v2	£136

English & Literature

• Goldilocks	£39
• Granny's Garden	£30
• Illustrated Works of Shakespeare	£23
• Karaoke Macbeth	£49
• Karaoke Midsummer Night's Dream	£49
• Living Poetry	£49
• Listen & Read (EB)	£39
• Oxford Reading Tree Talking Stories	£39
• Sherlock Holmes	£23
• Sherston Naughty Stories	£79

Geography, Nature & Environment

• British Birds	£150
• Creepy Crawlies	£49
• Counties of Great Britain	£39
• Countries of the World	£39
• Dictionary of the Living World	£49
• Earth Guide (EB)	£39
• Environment: Land & Air	£97
• Environment: Water	£97
• Environment: Climate Change	£34
• Environment: Dwindling Resources	£34
• Environment: Conservation	£34
• Garden Wildlife	£39
• Langdale Primary	£99
• Map Skills	£49
• Seahore Life	£39
• The Physical World	£97
• Usborne Exploring Nature	£125
• The World's Weather	£47

History

• Castles	£39
• Changing Times	£125
• Frontier 2000	£109
• Industrial Revolution	£105
• Medieval Realms	£145
• Photobase: Victorians	£49
• Picturebase: Victorian Britain	£99
• World War II: Global Conflict	£97
• World War II: Sources & Analysis	£97
• World of the Vikings	£39

Languages

• Directions 2000: French	£137
• En Marcha: Spanish	£137

Mathematics

• Cars – Maths in Motion	£49
• Number Games	£79
• Perspectives	£79
• Picture Gallery	£79
• Who Stole the Decimal Point?	£79

Science & Technology

• Chemistry Set	£149
• Science & Technology Library (EB)	£39
• Collins Electronic Food File (EB)	£29
• Science Series: Elements	£97
• Science Series: Materials	£97
• Inventors & Inventions	£147
• Photobase: Science	£49
• Understanding the Body	£39
• Understanding Energy	£47

Space & Astronomy

• Space Encyclopaedia	£34
• Space Science Sampler (PD)	£40
• Voyager Spacecraft (PD)	£200

Educational Resources

• Acorn Video Collection Disc 1	£10
• Acorn Video Collection Disc 2	£10
• Bitfolio 6 - clipart images	£49
• Horizon Report	£19
• Photobase: 1920's	£49
• Photobase: 1930's	£49
• Photobase: 1940's	£49
• Photobase: 1950's	£49
• Photobase: 1960's	£49
• Photobase: Landscapes	£49
• Sermec Treasure Chest	£69
• SSERC Graphics Collection	£99

Dictionaries & Encyclopaedia

• 19th Century Biographies	£25
• CIA World Fact Book (EB)	£29
• Oxford English Dictionary (EB)	£29
• Hutchinson Gallup Info (EB)	£29
• Hutchinson Guide to the World (EB)	£29
• Hutchinson Encyclopaedia	£49
• Kingfisher Children's Micropedia	£88
• Times & Sunday Times	£178
• Times & Sunday Times Sampler	£50
• Tekkie CD - Acorn PRM's on CD	£99

CD-ROM Drives



CUMANA

All Cumana CD-ROM drives are supplied with all necessary connecting cables, driver software and interface cards.

Cumana Oscar CD-ROM Drive

- Dual speed drive with motorised drawer
- Kodak PhotoCD compatible
- 320ms access time
- Connects to parallel printer port

Oscar CD-ROM drive	£219

Cumana Bravo CD-ROM Drive

- Dual speed drive with motorised drawer
- Kodak PhotoCD compatible
- 320ms access time
- Parallel port or SLCD versions

Bravo CD-ROM drive–Parallel port	£289
Bravo CD-ROM drive–A3000 SLCD	£289
Bravo CD-ROM drive–A5000 SLCD	£289
Bravo CD-ROM drive–EMU SLCD	£289

Cumana Victor CD-ROM Drive

- Dual speed multi-session drive
- Kodak PhotoCD compatible
- 320ms (402A), 210ms (632A) access time
- SCSI interface (not included)

CXX402A CD-ROM drive	£289
CXX532A CD-ROM drive	£289

The 602 and 604 CD-ROM drives employ a 6 disc autochanger, making it ideal for use on a network. 604 model is Quad speed.

CXX602 autochanger CD-ROM	£479
CXX604 autochanger CD-ROM	£969

Cumana Indigo CD-ROM Drive

- Dual speed multi-session drive
- Kodak PhotoCD compatible
- 320ms access time
- Connects to IDE Interface
- Fits in 5.25" drive bay inside RiscPC

CAA300i CD-ROM drive	£189
CAA300iA CD-ROM drive	£219

A version of the Indigo is also available for connection to a standard SCSI interface.

CAA401 CD-ROM drive	£189
CAA631 CD-ROM drive	£289

Optional CD Bundles

Bundle packs are only available at these prices when purchased with a CD drive.

Starter Pack

- Acorn VideoClip Collection CD
- Artworks Clipart CD
- Horizon Report
- Clares Pro Artisan v2 CD

£99

Primary Pack 1

- Creepy Crawlies CD
- Cumana Photo Album v1 CD
- Dictionary of the Living World CD
- Goldilocks CD
- Granny's Garden CD
- Sermec Treasure Chest CD

£175

Primary Pack 2

- Artworks Clipart CD
- Cars: Maths in Motion CD
- Sherston Naughty Stories CD
- Space Encyclopaedia CD
- Clares Pro Artisan v2 CD
- Hutchinson Encyclopedia CD

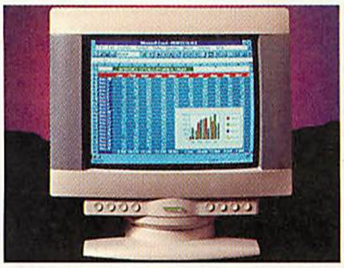
£250

Speakers & Accessories



• Aries Stereo Speakers	£9
• Aries Hi-Fi Stereo Speakers	£29
• Aries Hi-Fi Pro Stereo Speakers	£35
• Aries Digital Stereo Speakers	£49
• Aries Digital Plus Stereo Speakers	£59
• Aries Screen Microphone	£4.50
• Aries Stereo Headphones	£4.50

Aries Monitors



EnergyPro 14" SuperVGA Monitor

- 14" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- EPA Energy Star compliant
- 800 x 600 non-interlaced resolution
- Horizontal frequency: 29KHz - 38KHz

£165

Alphascan Pro LR 14" Monitor

- 14" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- 1024 x 768 @ 72Hz (non-interlaced)
- 1280 x 1024 @ 60Hz (non-interlaced)
- Horizontal frequency: 29KHz - 70KHz

£199

EnergyPro 6000I 15" Monitor

- 15" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- EPA Energy Star compliant
- 1280 x 1024 @ 60Hz (non-interlaced)
- Microprocessor control
- Horizontal frequency: 29KHz - 70KHz

£259

EnergyPro 7560I 17" Monitor

- 17" high res 0.28mm dot pitch tube
- Low radiation MPRII standard
- EPA Energy Star compliant
- 1280 x 1024 @ 60Hz (non-interlaced)
- Microprocessor control
- Horizontal frequency: 29KHz - 80KHz

£479

To use the above monitors with an A300, A400 or A3000 machine, you will need a SuperVGA VIDC Enhancer and adaptor.

• SuperVGA VIDC Enhancer	£29
• Multiscan VIDC Enhancer	£15
• Arc to VGA Monitor Adaptor	£9

Acorn Monitors

• AKF30 – 14" Med Res RGB	£179
• AKF40 – 14" Med Res RGB	£179
• AKF52 – 14" Med Res Multiscan	£249
• AKF50 – 14" High Res Multiscan	£299
• AKF60 – 14" High Res SVGA	£319
• AKF85 – 17" High Res Multiscan	£969

Flatbed & Hand Scanners

Canon IX-4015 Colour Scanner

The IX-4015 is a compact A4 flatbed scanner offering full 24-bit colour scanning up to a max resolution of 400 x 800 dpi. The scanner will also scan 256 grey scale images with a max resolution of 400 x 1200 dpi.

- 400 x 800 dpi resolution in colour
- 400 x 1200 dpi resolution in monochrome
- Connection via SCSI interface
- Spacetech Photodesk software
- TWAIN driver & Sleuth OCR software

£699

Aries ArcScan 3420 Scanner

The ArcScan 3420 is an A4 flatbed scanner for those who just want to use 256 grey scale images. With a resolution of 300 x 600 dpi it will provide high quality images for a fraction of the cost of other similar models.

- 300 x 600 dpi resolution
- 256 grey scale or monochrome operation
- 216 X 356mm overall scanning area
- Connection via SCSI-2 interface
- ImageMaster software & TWAIN driver

£399

• Upgrade to Photodesk software	£129
• SCSI-2 Interface for above	£165

HP ScanJet IIcx Colour Scanner

The ScanJet IIcx is an A4 flatbed scanner capable of producing full 24-bit colour scans at a resolution of up to 1600 dpi.

- 400 x 800 optical resolution
- Single pass scanning process
- 24-bit colour and grey scale modes
- A4 scanning area (216 x 297mm)
- Connection via SCSI interface
- Spacetech Photodesk software
- TWAIN driver

£849

Accessories

Document Feeders

• Auto Document Feeder – IX-4015	£249
• Auto Document Feeder – ArcScan	£259
• Auto Document Feeder – ScanJet IIcx	£365
• Transparency Adaptor – ScanJet IIcx	£499

SCSI Interfaces

• 8-bit SCSI interface (A3000/A3020)	£119
• 16-bit SCSI Interface (A300/A400)	£119
• 32-bit SCSI-2 Interface (A300/A400)	£165
• SCSI-2 Interface Cable	£20

Software

• Spacetech Photodesk software	£159
• Sleuth OCR software	£40

Scan256 Hand Scanner

Scan256 is a hand-held scanner giving you up to 256 grey scales at a maximum resolution of 400 dpi, and is supported by state-of-the-art software.

- 400mm scanning width
- 256 grey scales at up to 400 dpi resolution
- Highly advanced image processing tools
- Convoluting digital filters – over 100 choices
- True brightness & contrast control
- Save image in industry standard formats
- Selectable 256 grey/monochrome modes
- Ability to shear and/or rotate images

• **Scan256 handscanner – A300/A400**	£115
• **Scan256 handscanner – A3000 ext.**	£125

Archimedes A4 Scanner

The Archi A4 scanner is a low cost 64 grey scale scanner with a scan width of up to A4 size. With a maximum resolution of 400 dpi. It is the ideal solution for scanning larger line art drawings. The scanner can be used as either a hand-held device or with an optional sheet feeder.

• **Archi A4 Scanner – A300/A400**	£175
• **Archi A4 Scanner – A3000 external**	£195
• **Sheet Feeder for A4 Scanner**	£59

TO ORDER CALL OUR SALES HOTLINE 01582 745555
or FAX YOUR ORDER on 01582 488588

Hard Drives, Memory, Networking & Add-Ons

Hard Drive Upgrades

IDE Hard Drive Upgrades for A300/A400
Complete with drive, interface, mountng brackets, cables and software.

- ADA2010 280Mb 13ms £199
- ADA0580 365Mb 13ms £229
- ADA2030 420Mb 12ms £269
- ADA2210 528Mb 11ms £329

IDE Hard Drive Upgrades for A5000
For use as a replacement of existing drive.

- ADA2050 280Mb 13ms £159
- ADA0880 365Mb 13ms £189
- ADA2060 420Mb 12ms £219
- ADA2220 528Mb 11ms £279
- A5000 2nd Drive Kit £10

A3000/A3010 Internal IDE Hard Drives

- ADA0730 120Mb 19ms £179
- ADA2360 170Mb 13ms £219
- ADA1070 250Mb 11ms £249
- ADA2080 340Mb 11ms £269
- ADA2380 405Mb 11ms £399
- ADA2200 540Mb 10ms £489

A300/A400 IDE Hard Cards
Hard drive mounted on interface, complete with formatting software.

- ADA2370 170Mb 13ms £229
- ADA1090 250Mb 11ms £259
- ADA2090 340Mb 11ms £319
- ADA2390 405Mb 11ms £409
- ADA2230 540Mb 10ms £499

SCSI Hard Drive Upgrade for A300/A400
Complete with 16-bit interface, drive, cables and mountng brackets.

- ADA2300 365Mb 12ms £349
- ADA2310 528Mb 11ms £429
- ADA2320 1.0Gb 9ms £579
- ADA2330 2.0Gb 10ms £1069

Interfaces & Accessories

- 16-bit IDE Interface - A300/A400 £39
- 8-bit IDE Interface - A3000/A3010 £49
- SCSI Interface - A300/A400 £119
- SCSI-2 Interface - A300/A400 £179
- 25way-50way SCSI round cable £15
- 50way-50way SCSI round cable £15
- 50way-50way SCSI-2 round cable £20
- 50way-50way SCSI ribbon cable £8

Memory Upgrades

Model	2Mb	4Mb	8Mb
A3000	£49	£119	£269
A3010	£59	£139	-
A3020/A4000	-	£89	-
A410/1	£40	£120	-
A420/1	-	£80	-
A5000	-	£79	£269
A540/R260	-	£249	-

RiscPC Additional RAM Modules

- 2Mb £79
- 4Mb £119
- 8Mb £259
- 16Mb £399
- 32Mb £poa
- 64Mb £poa
- 1Mb VRAM £99
- 2Mb VRAM £159

RISC OS Upgrades

- RISC OS 3.1 Single User Upgrade £73
- RISC OS 3.1 Hardware Kit £21
- RISC OS 3.1 Bulk Software Pack £319

Fax/Modem Bundle

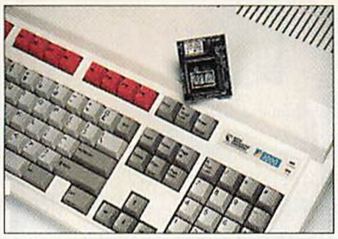
US Robotics Sportstar 14.4 Fax/Modem with ArcFax software enables you to use your Archimedes to send and receive faxes.

- Sportstar/ArcFax Bundle £149

Graphic/Sound Cards

- Colour Card Gold £239
- Chroma 500 Genlock Card £419
- Chroma 150 PAL Encoder £169
- Chroma Genlock Card £209
- Hawk V9 MKII Digitiser £189
- Eagle M2 Multimedia Card £319
- Vision24 254-line Colour Digitiser £99
- Vision24 508-line Colour Digitiser £139
- CC TV Tuner Card £89
- CC TV Tuner Card & Teletext £159
- CC Movie Magic MPEG Card £249
- Scanlight Video 256 £199
- Multiscan VIDC Enhancer £15
- SuperVGA VIDC Enhancer £29
- RiscPC 16-Bit Sound Card £59

25MHz ARM3 Turbo Card



Using the latest surface mount technology on a high quality 4 layer PCB, the ARM3 Turbo Card will increase the speed of your A300, A400 or A3000 computer by up to 6 times.

The upgrade can be fitted by the user in A300 and A400 machines, but for owners of the A3000 we can collect, fit and deliver your computer back for an additional £35.

Owners of A300 and old A440 models will require a MEMC1A upgrade to use the ARM3.

Buy ARM3 Turbo Card and RISC OS 3.1 Upgrade for only £159

Special Offer Price £99

Ultimate Expansion

Need an internal hard disk drive and a user port on your A3000 or A3010, then look no further. The Ultimate Expansion System from HCCS is an internal podule with a user port as standard. Space is provided for a 2.5" IDE hard disk drive and three micro-podule slots are also provided for future expansion.

- Ultimate Expansion Interface £39
- Ultimate Expansion Interface & IDE £99
- Ultimate Expansion with 170Mb drive £259
- Ultimate Expansion with 250Mb drive £299

Micro-Podule for Ultimate Expansion

- SCSI Interface £69
- Vision Colour Digitiser £69
- ScanLight 256 £229
- MIDI Interface £49
- Analogue Interface £29

I/O Expansion Cards

- A3000 User Port/Analogue Card £35
- A3000 User Port/MIDI Card £44
- I/O Podule - User/Analogue/1MHz £79
- A300/A400 User/Analogue Card £49

Miscellaneous Add-ons

- 4way Backplane - A300 series £22
- Archimedes Fan £8
- A3000 Serial Port Upgrade (AKA18) £19
- Arc to BBC Serial Link £15
- MEMC1A Upgrade £25
- Floating Point Accelerator - A5000 £99
- ArcLaser A4 1200dpi Laser Printer £985
- ScanLight 256 - A3000 Internal £199

2010 Concept Keyboard

- A4 Universal 2010 Concept Keyboard £99
- A3 Universal 2010 Concept Keyboard £109
- 2010 BBC User Port Cable £12
- 2010 Archimedes Serial Port Cable £12
- Concept Keyboard Designer software £20

Accessories

Dustcovers & Carry Cases

- A3000 Keyboard cover £5
- A3000 Keyboard & Monitor cover £9
- A300/A400 Micro & Monitor cover £9
- A5000 Micro & Monitor cover £9
- 14" Monitor cover £6
- A3000/A3010 Carry Case £10
- A4 Notebook Carry Case £35

Mice & Joysticks

- Archimedes Mk4 Mouse £24
- Acorn Logitech Mouse £29
- Voltmace Delta Cat Joystick £25
- Quest Tracerball £20
- Power Pad Single Joypad £25
- Power Pad Dual Joypad £34

Miscellaneous Accessories

- A4 Notebook Battery Pack £49
- A3000 Monitor Stand (WE) £15
- A3000 Monitor Stand (Acorn) £25
- A3000 External Podule Case £10
- Archimedes Keyboard Extension Cable £5
- Archimedes Mouse Port Splitter £5

Educational Discounts are available on most products to Schools, Colleges & Universities. Call for details.

Networking Products

Acorn Econet Products

- Econet Interface - A300/A400/A5000 £42
- Econet Interface - A3020/A4000 £49
- Econet Interface - RiscPC £49
- Econet Interface - A4 Notebook £49
- Econet Starter Kit £135
- Econet Bridge £239
- Econet Socket Kit (5pk) £25
- 100m Econet Cable £99
- Econet Station Lead (1.2m) £4

Acorn Ethernet Products

- Ethernet Interface III - A5000 £149
- Ethernet Interface - RiscPC £99

Acorn Access Peer to Peer Networking

- Acorn Access - A3000 £145
- Acorn Access - A3020/A4000 £145
- Acorn Access - A5000 £145
- Acorn Access - RiscPC £119

I-Cubed Ethernet Products

- EtherLan 102 - A3000/A3010 £129
- EtherLan 202 - A3020/A4000 £136
- EtherLan 502 - A300/A400/A5000 £129
- EtherLan 602 - RiscPC 600 £109

I-Cubed AccessFlash Network

- AccessFlash 100 - A3000/A3010 £149
- AccessFlash 200 - A3020/A4000 £159
- AccessFlash 500 - A300/A400/A5000 £149
- AccessFlash 600 - RiscPC 600 £139

Ethernet Hubs

- Aries EH-8 8 port Ethernet Hub £179
- Aries EH-12 12 port Ethernet Hub £259
- Aries EH-16 16 port Ethernet Hub £329

Ethernet Cabling

Cable length	Thinnet	UTP
3m	£5	£3
5m	£6	£5
10m	£9	£8
15m	£12	£10
20m	£17	£14

Ethernet Accessories

- BNC Terminators £1.25
- BNC In-line coupler £1.55
- BNC T-connector £2.00

Networking Software/Documentation

- AUN/Level 4 Fileserver Rel.3 £359
- TCP/IP Protocol Suite - single user £99
- TCP/IP Protocol Suite - site licence £399
- Level 4 Manager's Guide £19
- AUN Manager's Guide £19

PC Cards

Transform your Archimedes so you can run standard PC DOS or Windows based software with the Aleph One range of PC cards. Two models are available - 486SLC25 for general purpose applications or a 486SLC2-50 for greater performance.

Both versions come with interface connectors for a local IDE hard disk, a parallel printer port, serial port and there is also a socket provided for an optional maths co-processor. A single SIMM socket is provided and will accept RAM up to a maximum of 16Mb.

- 486 SLC25 PC Card - no RAM £349
- 486 SLC25 PC Card - 4Mb RAM £469
- 486 SLC2-50 PC Card - no RAM £429
- 486 SLC2-50 PC Card - 4Mb RAM £549
- 8Mb SIMM RAM for above £259
- 16Mb SIMM RAM for above £399
- 486SX33 PC Card - RiscPC 600 £199
- MS-DOS 6.2 & Windows 3.1 £89

Archimedes Spares

- A300/A400/A5000 Cased Keyboard £99
- A3000/A3010/A3020 Keyboard £29
- A4000 Cased Keyboard £79
- Arc Mk2 Keyboard Controller PCB £49
- A300/A400 Power Supply £59
- A3000 Power Supply £35
- A4000 Power Supply £59
- A5000 Power Supply £69
- 3.5" Floppy Drive - A3000/A400 £29
- 3.5" Floppy Drive - A4000/A5000 £35
- VIDC (VL86C310) £39
- MEMC1A (VL86C110) £29
- ARM2 8MHz CPU (VL86C010) £20
- IOC (VL86C410) £39
- 256K x 4 120ns ZIP DRAM £6
- Replacement Keyboard Cable £17
- Replacement Mouse Cable £12
- Replacement Mouse Ball £7
- 1.2v NiCad Battery - A3000/A5000 £4
- AA Batteries - A300/A400 £2
- Fan Filter & Clamp £6
- Loudspeaker £3
- A3010/A3020 FDD Eject Button £2

BBC Products

- AMX Super Art (ROM/Disc) £10
- AMX Stop Press (ROM/Disc) £10
- AMX Page Fonts for Stop Press £5
- AMX Mouse & FREE mouse mat £15
- Quest Paint software (ROM/Disc) £15
- ConQuest ROM £12
- Quest Fonts Disc £5
- Quest Integrex 132 printer driver £5
- Quest Tracerball - BBC B/M128 £20
- Quest Mouse Mat £3
- InterWord ROM £36
- InterSheet ROM £36
- InterChart ROM £25
- Logotron Logo ROM £40
- Mega3 ROM - Word/Sheet/Chart £69
- Numerator ROM £39
- Pendown ROM £32
- SpellMaster ROM £40
- Wapping Editor £29
- Wapping Art Disc £10
- Wapping Font Disc 1 £10
- Wapping Font Disc 2 £10
- View Printer Driver ROM £15
- View 3.0 ROM £45
- ViewSheet ROM £36
- ViewStore ROM £36
- ViewSpell ROM £28
- View Printer Driver Generator Disk £10
- Master 512 Co-processor £49
- Master 65C 102 Co-processor £39
- Solderless ROM Board £25
- 32K ROM/RAM Card - BBC B £29
- 64K ROM/RAM Card - BBC B £39
- 128K ROM/RAM Card - BBC B £59
- 32K Shadow RAM Card - BBC B £29
- 16K Static RAM for ROM/RAM Card £8
- 16K DRAM upgrade for ROM/RAM £7
- Battery backup for ROM/RAM Card £3
- Sideways RAM Utilities Disc £5
- Twin ROM Cartridge for Master 128 £6
- Quad ROM Cartridge for Master 128 £12
- Data Duck £10
- Power Duck £5
- Acorn 1772 DFS Kit - BBC B £47
- Acorn ADFS ROM Upgrade £25
- Acorn DNFS 1.20 ROM £10
- Watford 1772 DDFS Kit - BBC B £29
- BBC BASIC 2 ROM £15
- Watford DFS 1.44 ROM £10
- Watford Diagnostic Disc - BBC B £10

BBC Spares

BBC B Spares

- BBC B Power Supply £49
- BBC Keyboard £35
- Keyswitches £1
- Function Keystrip Holder £3
- Serial/Video ULAs £10
- 6502A CPU £5
- 6522A VIA £5
- 6845 CRTC £10
- 6850 ACIA £8

Master 128 Spares

- Master 128 Keyboard £62
- Master 128 Battery Pack £4
- Master 128 Power Supply £69
- Master ULAs £15
- 1772 Disc Controller £10
- 6818 Real Time Clock £12
- Loudspeaker £3
- 65SC12 CPU £12

Please note that due to the lack of brand new spare parts for the BBC some of the above items may be reconditioned

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Printers & Accessories

Laser Printers

All Laser printers (excluding Hewlett Packard & Panasonic 4400/4401/5400) include 12 Months On-Site maintenance

Brother HL630	6ppm	£326
Brother HL660		£499
Brother HL1260		£910
Canon LBP 4i	4ppm	£427
Canon LBP-8 IV	8ppm	£920
Canon LBP-8 IIIR	8ppm	£1559
Epson EPL-3000	4ppm	£389
Epson EPL-5200	6ppm	£462
Epson EPL-5600	6ppm	£594
Epson EPL-7500 PS	6ppm	£1135
Fujitsu VM600	6ppm	£499
HP Laserjet 4L	4ppm	£386
HP Laserjet 4 ML	4ppm	£734
HP Laserjet 4P	4ppm	£593
HP Laserjet 4MP	4ppm	£849
HP Laserjet 4MV	4ppm	£1989
HP Laserjet 4V	4ppm	£1372
HP Laserjet 4+	12ppm	£938
HP Laserjet 4M+	12ppm	£1258
HP Laserjet 4Si	16ppm	£2095
HP Laserjet 4Si MX	16ppm	£2967
NEC SuperScript 610	6ppm	£268
NEC SuperScript 610+	6ppm	£283
NEC SuperScript 660	6ppm	£416
NEC SuperScript 660i	6ppm	£569
NEC SuperScript Colour 3000	6ppm	£677
OKI OL-400ex	4ppm	£319
OKI OL-410ex	4ppm	£442
OKI OL- 850 PS	8ppm	£1199
Panasonic KX-P4400P	4ppm	£279
Panasonic KX-P4401P	4ppm	£330
Panasonic KX-P4410*	5ppm	£318
Panasonic KX-P4430*	5ppm	£479
Panasonic KX-P4440*	10ppm	£679
Panasonic KX-P5400	4ppm	£595
Star WinType 4000	4ppm	£296

*2 years on-site warranty

Laser RAM Upgrades

Type	1M	2M	4M	8M
Canon LBP-4+	£139	–	–	–
Canon LBP-4i	£109	–	£279	–
Canon LBP-8 IV	£119	–	£299	–
EPL-4100/4300	£70	£110	£205	–
EPL-5200/5800	£58	£115	£215	–
Fujitsu VM600/VM4	£57	£85	£149	£299
Fujitsu VM800	£115	–	–	–
HP III/IIIP/IIID	£75	£115	£135	–
HP II/IID	£75	£115	£135	–
HP IIISI	£57	£85	£158	£299
HP 4/4M/4P/4MP	£85	£85	£149	£299
HP 4L/4ML	£75	–	–	–
KX-P4410/4430	£129	£199	–	–
KX-P4420/4450i	£75	£115	£135	–
KX-P4400/5400	£89	£139	£229	–
OKI OL400e	£99	£118	–	–
Star LP-8	£138	£225	–	–
Star LS-5	£75	–	–	–

Laser Consumables

Type	Toner	Drum	Dev
Brother HL630	£20	£99	–
Canon/Star 4s	£46	–	–
Canon LBP-8 IV	£70	–	–
Canon LBP-8 III	£52	–	–
EPL-4100/4300	£75	£89	–
EPL-5200	£85	–	–
EPL-7100/7500/8100	£117	–	–
Fujitsu VM600	£85	–	–
Fujitsu VM800	£115	–	–
Fujitsu VM4	£29	£149	£89
HP II/III/IIID	£47	–	–
HP IIP/IIIP	£46	–	–
HP IIISi/4Si	£85	–	–
HP 4/4M/4P/4MP	£72	–	–
HP 4L/4ML	£49	–	–
NEC 610	£85	–	–
NEC S80/S62P	£105	–	–
OKI OL-400/800	£19	£189	–
OKI OL-400e	£17	£129	–
KX-P4410/30	£29	£80	£90
KX-P4440	£32	£108	£115
KX-P4420	£24	£60	£55
KX-P4450/50I/51/55	£18	£75	£60
KX-P4400/5400	£11.50	£69	–
Qume Crystalprint	£99	£189	–
Star LS-5	£83	–	–

Laser Accessories

JetPage Postscript Cartridge - IIP/IIIP	£225
Postscript Upgrade for LaserJet 4	£270
LaserJet 4 Lower Paper Cassette	£205
LaserJet 4 JetDirect Ethernet Card	£339
LaserJet IIIP Lower Paper Cassette	£115
Ozone filter for KX-P4420	£9
Ozone filter for KX-P4450/4455	£20
LaserJet 4Si Duplex Unit	£475
Envelope Feeder for LaserJet 4	£199
LaserJet Font Cartridges	from £45
LaserJet III FX/IBM Emulation Cart.	£79
Lower Paper Tray for Canon LBP-4	£98
A5 Paper Feeder for LaserJet 4P	£85
Postscript Upgrade for LaserJet 4P	£225

9pin Matrix Printers

Citizen Swift 90	80col	£114
Citizen Swift 90C	80col	£121
Citizen 1200+ Parallel	80col	£90
Citizen 120D+ Serial	80col	£105
Epson LX100	80col	£109
Epson LX300	80col	£89
Epson LX400	80col	£89
Epson LX1050	132col	£172
Epson FX870	80col	£222
Epson FX1170	132col	£280
Epson DFX5000+	132col	£1095
Panasonic KX-P1150	80col	£89
Panasonic KX-P1695	132col	£267
Star LC15	132col	£177
Star LC100C	80col	£89
Star LC90	80col	£89
Star ZA200	80col	£255
Star ZA250	132col	£315

24pin Matrix Printers

Citizen ABC Mono	80col	£106
Citizen ABC Colour	80col	£125
Citizen Swift 200 Mono	80col	£138
Citizen Swift 200 Colour	80col	£146
Citizen Swift 240 Mono	80col	£160
Citizen Swift 240 Colour	80col	£178
Citizen Swift 24X	132col	£235
Epson LQ100	80col	£97
Epson LQ150 Mono	80col	£114
Epson LQ150 Colour	80col	£158
Epson LQ300		£140
Epson LQ570+	80col	£185
Epson LQ870	80col	£350
Epson LQ1070	132col	£282
Epson LQ1170+	132col	£400
Epson DLQ3000		£672
Epson LQ3000	132col	£680
NEC P2Q	80col	£98
NEC P3Q	132col	£236
NEC P62Q	80col	£315
NEC P72	132col	£375
NEC P90	132col	£549
Panasonic KX-P2023	80col	£108
Panasonic KX-P2124	80col	£198
Panasonic KX-P1624	132col	£210
Panasonic KX-P2135	80col	£124
Panasonic KX-P3626	132col	£259
Star LC24-20 II	80col	£113
Star LC24-15 II	132col	£232
Star LC24-300C	80col	£188
Star LC90	80col	£79
Star LC240 Mono	80col	£92
Star LC240 Colour	80col	£105
Star XB24-200C	80col	£315
Star XB24-250C	132col	£385

Ribbons/Ink Cartridges

(Manufacturers Original Ribbons Only)

Type	Black	Colour
Canon BJ10ex/BJ10sx	£14	–
Canon BJ200/BJ230	£16	–
Canon BJ300/BJ330	£11	–
Canon BJC600	£6	£7
Canon BJC800	£16	£22
Canon BJC4000	£7	£13
Citizen 120D+	£4	–
Citizen Swift 200/240	£4	£13
Citizen Swift 24X	£8	£18
Epson LX400/LX850/FX870	£4	–
Epson LX100	£4	–
Epson LX1050/FX1170	£5	–
Epson LQ100	£4	–
Epson LQ150	£4	£12
Epson LQ570/870	£5	–
Epson LQ1070/1170	£8	–
Epson LQ2550	£8	£16
Epson SQ870/SQ1170	£21	–
Epson Stylus Colour	–	£29
Epson Stylus 300	£12	–
Epson Stylus 800/1000	£10	–
Fujitsu DL1150/DL1250	£5	£7
Fujitsu DL3600	£6	£12
Fujitsu B100/B200	£18	–
HP DeskJet Std Capacity	–	£21
HP DeskJet High Capacity	£20	–
HP DeskJet 310	£15	£21
HP DeskJet 1200	£20	£21
HP PaintJet	£16	£18
HP PaintJet XL300	£16	£18
Kaga/Taxan KP810/815	£5	–
NEC P88Q/P32Q	£8	–
NEC P82/72/90	£8	£14
Panasonic 1150/1170/1180	£7	–
Panasonic 2180/23/24/35	£7	£14
Panasonic 1824/2824	£8	–
Panasonic KXP3626	£11	–
Star LC10/LC20/LC100	£5	£9
Star LC100/200	£5	£11
Star LC24-20/24-100/24-200	£5	£12
Star LC24-30	£8	£12
Star XB24/ZA200/ZA250	£5	£12
Star SJ48	£15	–
Star SJ144 Thermal	£18	£18

Inkjet Printers

Canon BJ10sx	80col	£145
Canon BJ200	80col	£186
Canon BJ230	132col	£247
Canon BJ300	80col	£333
Canon BJ330	132col	£404
Canon BJC600	80col	£344
Canon BJC800	132col	£1065
Canon BJC820 (Mac)	132col	£1228
Canon BJ4000 Colour		£270
Citizen ProJet IIC		£204
Epson Stylus 300	80col	£138
Epson Stylus 400	80col	£130
Epson Stylus 800+	80col	£168
Epson Stylus 1000	132col	£311
Epson Stylus Colour	80col	£327
Epson SQ870	80col	£415
Epson SQ1170	132col	£580
Fujitsu B100	80col	£145
HP DeskJet 320		£165
HP DeskJet 320 & CSF		£180
HP DeskJet 520	80col	£193
HP DeskJet 500C	80col	£199
HP DeskJet 560C	80col	£326
HP DeskJet 1200C	80col	£630
HP DeskJet 1200C PS	80col	£992
HP PaintJet XL300+ A4	132col	£1589
HP PaintJet XL300+ A3		£1769
HP PaintJet XL300 PS A4	132col	£2557
HP PaintJet XL300 PS A3		£2719
HP DeskWriter 520 (Mac)	80col	£199
HP DeskWriter 500C (Mac)	80col	£260
HP DeskWriter 560C (Mac)	80col	£375
Star SJ48	80col	£182
Star SJ144	80col	£285
Star Wintype 800C Thermal Colour		£592

Sheet Feeders

Canon BJ10ex/BJ10sx	£40
Canon BJ300	£88
Canon BJ330	£92
Citizen Swift 24/200/240	£75
Epson LX400	£69
Epson LQ570/LQ870	£47
Epson LQ1070/LQ1170	£89
HP DeskJet 310	£48
NEC P20/P220	£59
NEC P3Q/P32Q	£85
Panasonic 1170/1180/1123	£59
Panasonic 1124/1124i/2124	£79
Panasonic 1824/2824	£128
Panasonic KX-P2135	£30
Star LC100	£69
Star LC24-20	£69
Star LC200/LC24-200	£69

INKJET REFILL PACKS

Canon BJ10ex/BJ10sx - 2 pack	£12
Canon BJ10ex/BJ10sx - 5 pack	£24
Canon BJ10ex - Cart/3 Refills	£29
Canon BJ200 - Cart/3 Refills	£34
HP DeskJet Std Capacity - 2 pack	£8
HP DeskJet Hi-Capacity - 2 pack	£24
HP DeskJet Std Capacity - 5 pack	£14
HP DeskJet Hi-Capacity - 5 pack	£35
HP DeskJet Colour - Cart/4 Refills	£49

Accessories

Citizen Swift 200/240/ABC Colour Kit	£32
Citizen Projet II Cartridge	£3
Canon BJ10sx Battery Pack	£32
Epson 0K Serial Interface	£29
Epson 8K Serial Interface	£75
Epson 32K Serial Interface	£95
Epson LQ100 Tractor Unit	£29
HP DeskJet FX Emulation Cartridge	£49
HP DeskJet IBM Emulation Cartridge	£57
HP DeskJet 256K RAM Cartridge	£45
HP Deskjet 310 Black Cartridge	£14
HP DeskJet 310 Battery Pack	£33
HP DeskJet Carry Case	£49
HP DeskJet 310 Colour Kit	£28
HP DeskJet 1200 Postscript Upgrade	£499
HP DeskJet Prestige Elite Fonts	£55
HP DeskJet Letter Gothic Fonts	£56
HP DeskJet 310 Parallel Cable	£12
Panasonic Serial Interface	£49
Panasonic 32K Buffer	£16
Panasonic 2180/2123 Colour Kit	£30
Star 8K Serial Interface - LC range	£52
Star 8K Serial Interface - XB range	£39
Star 32K Buffer - LC24/XB24	£52
Dustcovers for 80col printers	£6
Dustcovers for 132col printers	£9
51636G - 50 x DJ500 Transparencies	£35
51838J - 50 x DJ500 Glossy A4 Paper	£35
51630Z - 50 x DJ500 A4 Paper	£15
Appletalk Printer Cable - 2m	£12
Appletalk Interface for DeskJet 1200	£129
Appletalk Interface for LaserJet III	£189

HP On-site Warranty 3yrs

Mono DeskJets & Deskwriters	£40
Colour DeskJets & Deskwriters	£85
4ppm LaserJets & DeskJet 1200C	£100
8ppm LaserJets	£185

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1 Finway, Dallow Road, Luton, Beds.
Tel: 01582 74 55 55

WATFORD SHOWROOM
250 Lower High Street, Watford, Herts.
Tel: 01923 23 77 74

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Standard Low Cost Sharers

Connects	Serial	Parallel
2 to 1	£8	£9
3 to 1	£11	£12
4 to 1	£15	£16
5 to 1	£27	£28

Professional Sharers

Connects	Serial	Parallel
2 to 1	£12	£13
3 to 1	£15	£17
4 to 1	£24	£26
5 to 1	–	£38

Crossover Sharers

Connects	Serial	Parallel
2 in/2 out	£28	£29
4 in/2 out	–	£49

Auto Printer Sharers

Uni-Directional

Connects	Serial	Parallel
2 to 1	£27	£29
4 to 1	£44	£45
8 to 1	£62	£75

Bi-Directional

Connects	Serial	Parallel
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4 to 1		£35

256K RAM module for above £59

256K Auto Sharers

Parallel Auto sharers with 256K RAM

- 2 in/2 out £99
- 4 in/2 out £115
- 8 in/1 out £149

Compact Converter

Serial/Parallel Converter	£32
Serial/Parallel Converter – 256K Buffer	£40
IEEE-488/Centronics Converter	£49

Buffers

	256K	1Mb	2Mb
Flash Buffer	£65	£98	£119
Fast Flash Buffer	£85	£125	£158
Plotter Buffer	£155	£184	£330

Printer Leads

	2m	5m	10m
PC Parallel	£4	£8	£13
25 'D' Male/Male	£4	£8	£13
25 'D' Male/Female	£5	£9	£14
Centronics D/Ended	£8	£10	£15
BBC Parallel	£6	–	–

Other standard cables available on request

Paper

500sht A4 80g Laser/Copier paper	£2.50
500sht A4 80g Coloured paper	£3.50

Pink, Green, Gold, Daffodil, Blue, Vellum

1000sht 9.5" x 11" Fanfold paper	£5.50
2000sht 9.5" x 11" Fanfold paper	£8
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2000sht 15" x 11" Fanfold paper	£11
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High Quality Paper

500 sheets A4 90gm pure white ideal for laser & inkjet printers
£4.50

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On continuous fanfold sheets

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1000 90mm x 49mm Twin Row	£4.95
1000 102mm x 36mm Twin Row	£4.70
2400 70mm x 37mm Laser Labels	£15.25

Miscellaneous

80 column Perspex printer stand	£12
132 column Perspex printer stand	£18
80 column Professional printer stand	£15
132 column Professional printer stand	£27
Printer trolley	£39
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Software, Books & Diskettes

Software for Acorn RISC Computer Systems

As one of the largest dealer in Acorn software in the UK, we doubt that you will find any of the titles listed here cheaper alsewhere.
Also if there is something you don't see listed, give us a call and we will attempt to source it for you and give you the best price.

All software requires at least 1Mb RAM and RISC OS operating system.

Special notes
† - not suitable for RiscPC
†† - requires 2Mb RAM
‡ - hard disk required

Games

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*info

Dave Lawrence and Dave Acton present more programs, tips and trivia from beyond the dark side of the PRM.

Stop, go

Andrew Kemp

Back in March 1993 we carried a short utility that allowed you to replace (or remove) the desktop welcome banner sprite. Andrew Kemp's (PinFilter *et al*) program goes one further and provides methods to intercept both start up and shutdown sequences and execute a given command in each case. Two commands are provided:

*Start specifies a star command to be executed instead of displaying the desktop welcome banner. This could be, for example, something simple like Screenload Boot:Picture or maybe a command to render a *Draw* file. If you want more than one command executed, store them in an Obey file and run it with the *Start command. Obviously you need to load the module and issue the *Start command somewhere in your boot sequence *before* the desktop has started. In a RISC OS 3.5 boot sequence you could include them in a directory within *Boot.Choices.Boot.PreDesk*.

The *Stop command works in exactly the same way except the command is issued once the desktop has been shutdown with Ctrl-Shift-F12. The 'Restart' window will still be display once your command has finished.

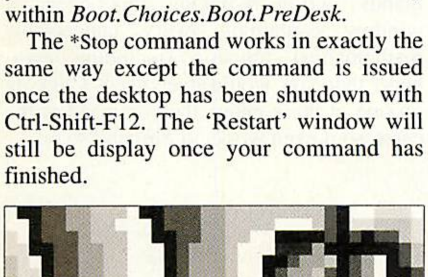


Figure 1: Try drawing this!

Liquid Crystal

Alistair Turnbull

'On the cover of one of my lecture handouts last year was a picture of exactly this effect, causing no end of excitement in my sad little brain. The best way to understand what is going on is to actually watch the thing, but I'll wave a few hands anyway,' says Alistair Turnbull, a regular amongst these pages and author of this strange little demo.

'If you freeze a liquid crystal, all the molecules try to line up and point in the same direction. However, they do this all at once, and so you end up with them all agreeing incompatible standards with each other (just like computer economics really).

'If two regions with different alignments bump into each other, the boundary gets smoothed out and averaged, but you are still left with a curve. If three regions meet at a point, you can get these curves bending back on themselves and joining up. The molecules in the middle have no well-defined alignment at all, and that is the *particle*.

'The *anti-particle* comes from trying to do this with wrap-around, or with fixed boundaries. You can't twist something to fit on one side without disrupting the other side. To appreciate this, try drawing the picture in Figure 1 by hand, like I did about five minutes ago.

'The rules are that you have to have the colours in the correct order everywhere in the picture, you have to have four bands of each colour meeting at each particle, and the colours must wrap around (e.g. make the boundary all white). It is impossible to end up with an odd number of particles.

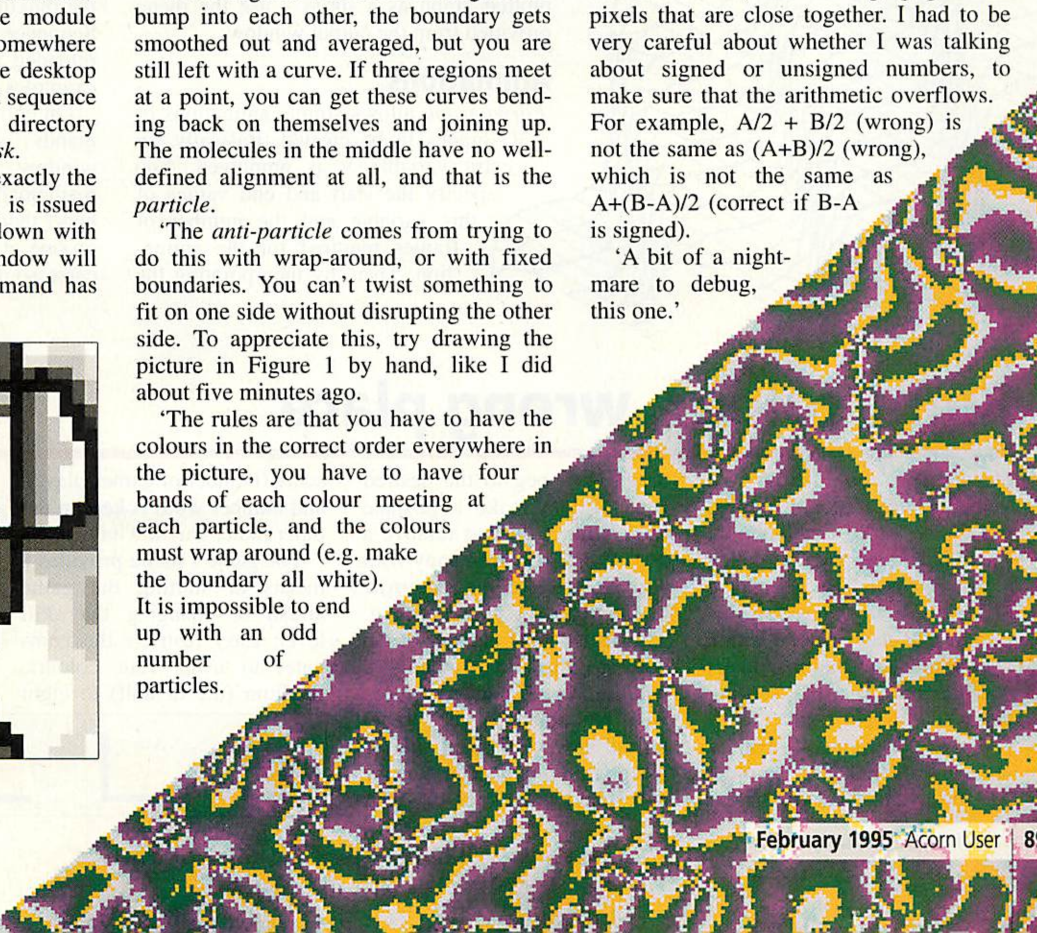
'You see the pattern when you put the liquid crystal between crossed polarising filters, because it disrupts the polarisation of light. This is exactly how an LCD calculator display works.

'However, because this is a simulation and not real life, I've just used colours to represent different orientations, and palette-switched them for psychedelic effect. The colours are really awful. Why did the 70s ever end?

'The animation is a bit slow on an ARM2, so holding down the space bar stops the generation, and concentrates on the palette switching.

'The program works by starting with a random screen, and averaging pairs of pixels that are close together. I had to be very careful about whether I was talking about signed or unsigned numbers, to make sure that the arithmetic overflows. For example, A/2 + B/2 (wrong) is not the same as (A+B)/2 (wrong), which is not the same as A+(B-A)/2 (correct if B-A is signed).

'A bit of a nightmare to debug, this one.'



HANDS ON

Formugraph

Steven Insley

3D graph plotters are nothing new, but we thought this desktop version of the classic would be appreciated by all. *Formugraph* was written by 15-year-old Steven Insley of Matlock in Derbyshire.

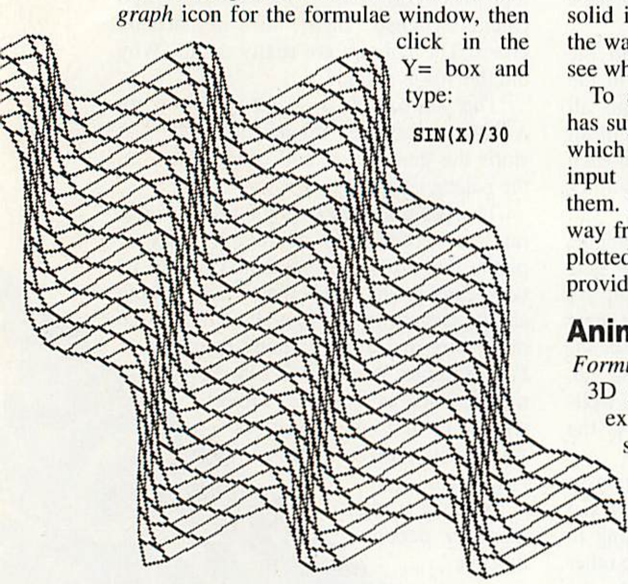
Install the application in the usual way. You then have a choice of plotting a simple function or creating an animation. Click with Select on the *Formugraph* icon to open the formulae window or with Adjust to open the animation window. The application is a friendly one by the way, supporting *Help*.

The 3D graph produced is made up of just two ordinary 2D graphs displayed at the same time, over each other. Y is calculated from X and Z. The points for Y are plotted and neighbouring points are joined together to produce the curves. The curves in one direction are of X and Y, with Z as the constant. The curves in the other direction are of Y and Z with X as the constant. If these are plotted at right angles to each other isometrically, then the single 3D graph is produced.

Plotting a graph

As an example, click Select on the *Formugraph* icon for the formulae window, then click in the Y= box and type:

```
SIN(X)/30
```



You must put the '/30' on or else the points will go off the top of the screen. Now click OK and wait for the graph to be calculated and drawn. Now, to make things more interesting, change the formula to:

```
(SIN(X)+SIN(Z))/30
```

and click OK. Now you can see sine curves along both the X and Z axis, but the interesting thing is that the sine curves on the X axis are plotted in relation to those on the Z axis.

When entering a formula you may find the Y= icon becomes cluttered with brackets and so on, and is not easy to follow. The formula may be spread over several lines so, for example, the formula:

```
Y=(SIN(X)+COS(Z))/30
```

could become:

```
A=SIN(X) B=COS(Z) Y=(A+B)/30
```

which is a lot easier to understand and is also more easily modified. Note that the Y= and C= are visible when the window is first opened, but to reveal the A= and B= icons, you must click on the Toggle size icon. Doing so will also reveal the grid/solid icon which can be toggled to affect the way the graph is displayed – try this to see what happens!

To assist with formula design, Steven has supplied a selection of saved formulae which can be loaded by dragging onto the input window or by double-clicking on them. Formulae can be saved in the usual way from the menu. You can also save the plotted graph as a sprite – use the menu provided from the output window.

Animations

Formugraph allows simple animations of 3D graphs to be created. Basically, an extra variable V is employed. You specify the start and end values of this variable and the number of frames required for the animation. Then, by incorporating the value of V somewhere in your formula you can get the graph to change over time.

For example, let's animate our original formula. Open the animation window by clicking on the *Formugraph* icon with Adjust or using the To Sequence menu option. Now modify the formula to read:

```
(SIN(X)+COS(Z))/V
```

and set V to run from 20 to 60 with 20 frames. Here the scale of the bumps will decrease over time. For a shifting curve try entering:

```
Y=(SIN(X+V)+COS(Z))/45
```

with V from 0 to 6 over 20 frames.

To start rendering you must drag one of two icons to the directory you want the animation to be saved in. Enter the filename in the writable icon provided. If you drag the sprite file icon, a series of sprite files are saved, numbered sequentially. More usefully, drag the X^2 icon as this saves an application which when run will show the animation. Within this application the formula is also saved for future reference. The speed of replay can be altered by dragging the speed bar shown.

To the left of the X^2 icon there is a sort of circle-like icon which is in fact the loop/yoyo icon. When there are two arrow heads on the circle the animation goes from frames 1 to n and then n to 1 (n= number of frames). When there is only one arrow head the animation goes from frame 1 to n and then 1 to n again.

ADFS limits you to 77 frames as this is the maximum number of directory entries. Sequence formulae files may be saved and reloaded also, and there is a selection of examples on the disc.

On both the input menus there is a Commands option. Clicking this opens a window containing every conceivable mathematical function (including numbers) that you would ever need. Clicking on one of these enters the command at the caret, so it even works in *Edit* and so on.

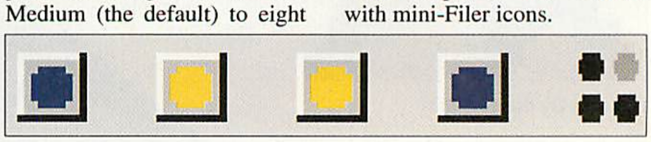
Right colour, wrong place

James Harvey

Mastermind: you know the score. Some coloured pegs, guess the right combination, black and white pegs, *no* black leather chair... The advantage of James Harvey's desktop version of this classic game is that your opponent (the computer) doesn't muck up the scoring half way through.

You make a guess either by selecting a colour peg from the peg box and clicking or by dragging a peg to the desired spot. If you make a mistake click with Adjust to remove a peg. When you are happy with a guess, click on the red arrow to the right for your marking. The little dots at the tops of the columns allow you to 'hold' a column, once marked pieces will automatically be transferred for your next guess. Keep going until you win or use up all your guesses. Your score (number of games played and number won) is kept in the other rather garish window.

The game's menu provides a means of starting the game afresh or changing the skill level; Easy restricts the computer to using four colours, Medium (the default) to eight colours and Hard to 12. You can also make the game harder by choosing Use Spaces which means that the computer won't necessarily pick four pegs. For a change you might like to play with Boring Icons off, which replaces the colours with mini-Filer icons.



Wobble board

Jack Parkinson

Jack Parkinson has sent us a scrolltext program, but this is no ordinary scrolly – the difference is that instead of plotting the text onto a single waveform, two different waves are used: an upper and a lower wave. The text is then scaled to fit between the two waves. The 'wobbling' effect occurs as the upper and lower waves drift in and out of phase with each other. While running, three keys can be used:

W – While held down, stops the wave from moving;
T – While held down, stops the text from scrolling;
Esc - Quits the program.

Of course, it is possible to put in your own text message by editing the text file inside the *!WobblText* directory.

Changing the motion of the wave

If you want to alter the wave effect, the variables which should be changed are at the start of the *!RunImage* listing (inside the *!WobblText* directory). They are:

amp1%, amp2%: The amplitude of the waves. These can have a value from 2 to 7, where 2 is the largest and 7 is completely still. On ARM2 machines these amplitudes should be greater than 2 to ensure a constant 50fps animation.

wave1inc%, wave2inc%: How much the waveform is advanced each frame (i.e. speed). It is best to keep these values under 32 or it starts to look silly!

minheight%: The minimum possible height of the text (i.e. the height when the top wave is at its lowest point and the bottom wave is at its highest point). This should generally be quite a small value or the wobbling effect will be spoilt (e.g. <16).

Note: if amp1% and amp2% are both set to 2 then minheight% must be set to 0 or things will go wrong!

Jack has also provided the code he used to generate the characters used in the main program. If you wish to modify the characters or are just curious as to how the program works, load the sprite file *plaincset* (within the *!WobbleText* directory) into *Paint* and have a look.

There is a pile of sprites (each named with its ASCII code) for each letter and four special sprites 'backg', 'shade', 'outline' and 'shadow' which are used to colour the outlines. The BASIC program *mkchars* takes this file and creates the raw data in *charimage* which is then used by the scroll routine.



Another dimension

Paul Dunning

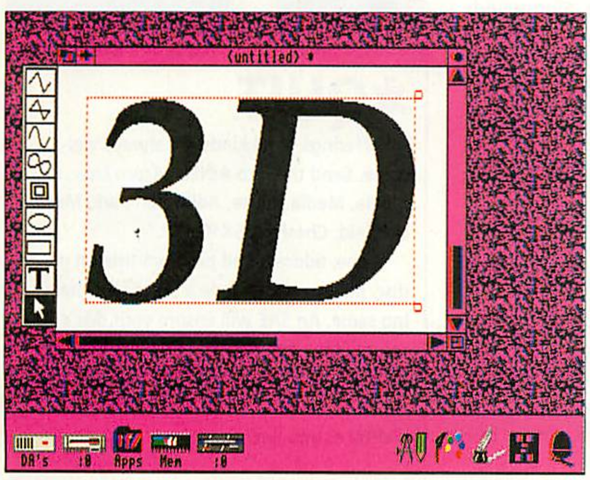
Fed up with your flat old desktop? The new look icons still not three-dimensional enough for you? Well, this little number from Paul Dunning of Watford might be the answer.

The author describes *3D* as 'the most useless desktop enhancement ever' (well Paul, you might have some competition from past ✱INFO contributors there). Says Paul:

'After looking with interest at the auto stereograms that you have been publishing recently, I found myself asking the following question – can this be put to use on the desktop? After a period of time thinking about this, I decided that either it would be impossible, or at least beyond my programming capabilities. Far better for me to dig out a pair of 3D spectacles and try that.

'I have done something a little like this before – I set up the one of the Macintoshs (spit) at University to produce a backdrop over which the windows floated. However, I got complaints, so it got removed.

'This version sets up a better environment. The windows and scroll bars float in front of the screen, the icon bar icons also are affected, and I have modified one of the *NewLook* backdrops so that it apears to be more distant. If anything, *3D* demonstrates how the red/blue colours can make a 3D scene quite simply. The program, when run, will produce a banner telling you what to do, and it will then alter the palette, change the icons and load in the backdrop.'



This desktop silly is designed to run in 16-colour modes like mode 12. It doesn't work on a Risc PC since the *Desktop_SetPalette command is no longer with us! If anybody really feels the need to write version two then do send it in.

Cycledelic

Timothy Prosser

A new variation on an old theme here from Timothy Prosser. In the past in ✱INFO we've had plasma clouds, colour cycling and 3D landscapes before, so here's a program which combines all three ✱INFO disciplines. The plasma pattern is built up in 2D using a recursive-like method – but note that no actual recursion is used – and then plotted in 3D-ish (as Timothy calls it!) before being colour-cycled in the usual way. A new pattern is generated after a short while or by clicking a mouse button.

Now all we need is a fractal DTP program, or a colour cycling spreadsheet. Get to it, someone!

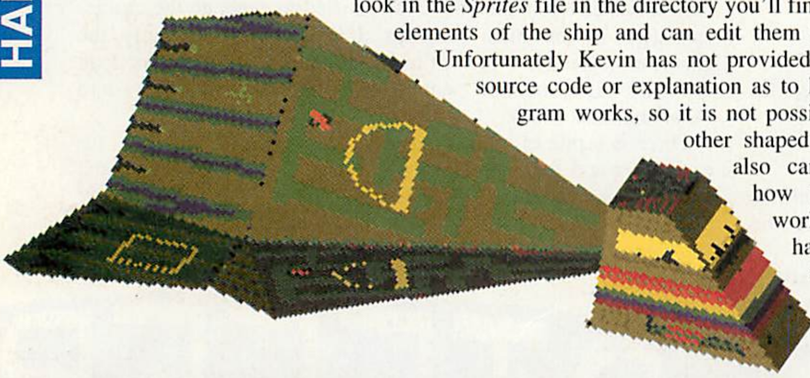


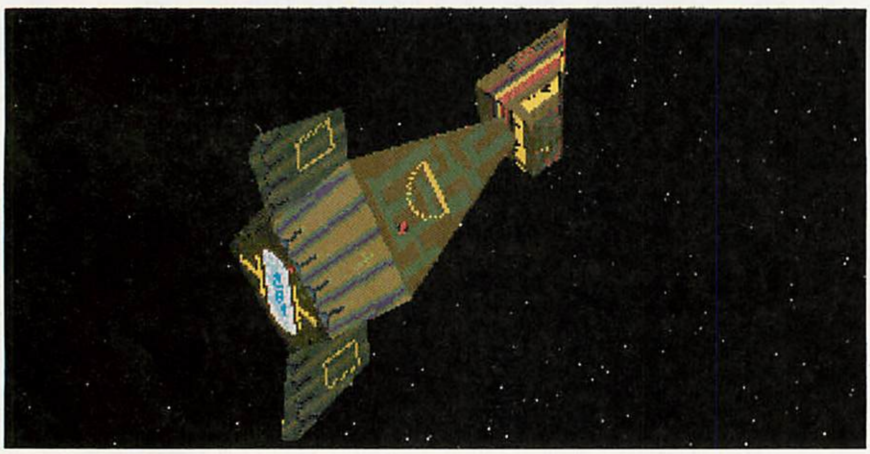
Sweet wrapper

Kevin Martin

We must apologise for the misleading comments in the last Jan Vibe section about texture mapping. To make up for this, we would like to present a short ditty from Kevin Martin, which *does* map textures. If you run *Textumap* you will be presented with a space ship spinning slowly in the starry expanses of outer space, and the mouse may be used to adjust its spin.

The space ship may look as if it is made out of an old cornflakes box at first, but look again and you'll notice that each section is actually a sprite, properly light sourced. If you look in the *Sprites* file in the directory you'll find the various elements of the ship and can edit them if you wish. Unfortunately Kevin has not provided us with any source code or explanation as to how the program works, so it is not possible to create other shaped objects. We also cannot explain how the routines work, so you'll have to work that out for yourself.





Being PC

Andrew Bower

A bit of a 'first' here – three machine code utilities in 8086 assembly language! Sorry, no prizes for guessing that they are for use with the PC emulator.

Andrew Bower has been busy reading his PC emulator manual and has provided three PC commands which allow you to issue VDU sequences and star commands from the DOS prompt. The three '.COM' files should be placed somewhere in your library path (on the emulator). The use of these commands should be self explanatory; for example:

```
OSCLI CAT
```

would catalogue the current (RISC OS) directory, and:

```
VDU 7
```

would make a beep. Beware though that the RISC OS output does not merge well with the PC output, so some surreptitious VDU 12 and CLSs may be needed to get some sensible looking results. By issuing some text colour change VDU sequences you can make the RISC OS output different to white on black, but as the PC uses a different font you probably find it distinctive enough anyway.

Note also that you will not necessarily see any results from these commands when running the emulator in a window as RISC OS will have switched into VDU 5 mode and the text will invariably be off-screen!

Andrew has made use of the two pretend opcodes that the emulator uses to communicate with RISC OS:

• SVC 257 is used to translate an address within the 8086 into its real ARM address;
• SVC 258 is used to execute a SWI with the given register parameters.

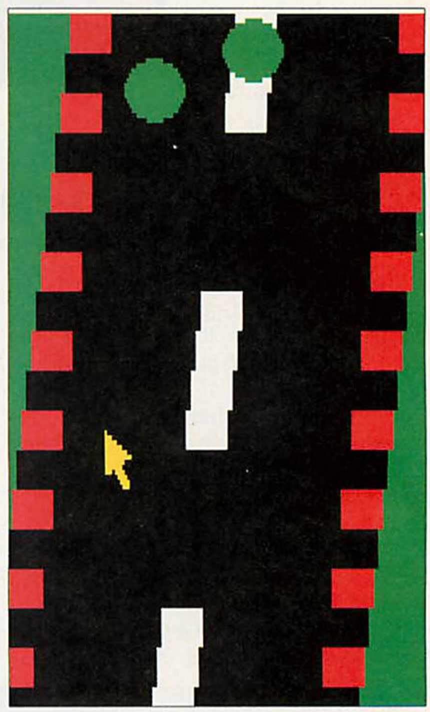
If you are interested in such things the source code for these utilities is also provided on the cover disc. Andrew created the execututables using SID in DR DOS (a machine code debugger with a single line assembler).

Rat race

Alister Fields

Forget *Road Rash, The Need for Speed* and *Super polypoly whatsitcircusthing,* we are very proud to present the most amazing racing game to come out of Matlock this year! Alister Fields' wittily named *Mouse-Race* has it all – a road and a mouse. What more could you ask for? In this brutal game there are no rules, it's merely a case of surviving for 60 seconds without plastering yourself along the sides of the track or colliding with too many of the deadly green obstacles that litter the tarmac. Your mouse can withstand 100 impacts before imploding. Are *you* up to the challenge?

Alister also also asked us if he should buy a Risc PC or a Pentium PC, as he says he wants to be a computer programmer when he is older (he is only 14 now), so would he be better off learning to program the PC? Well, we had a quick poll in the *INFO office, and nine out of ten said the Risc PC, and 1.000491234 said the Pentium.



*QUIT

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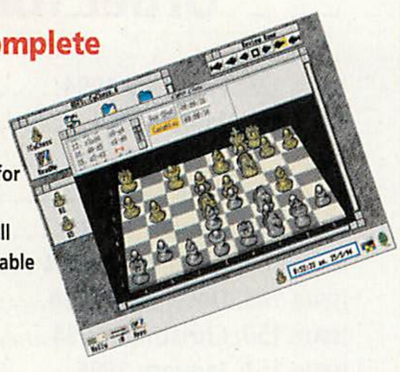
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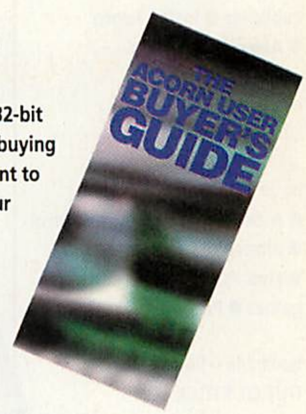
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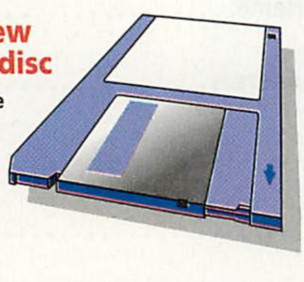
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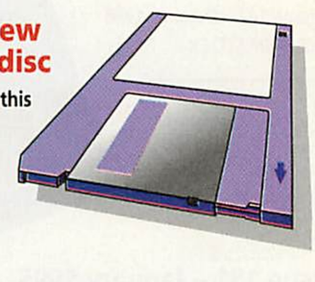
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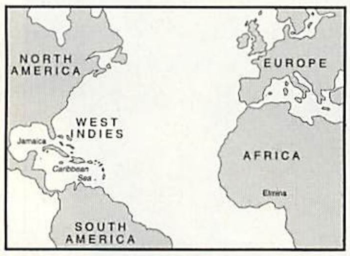
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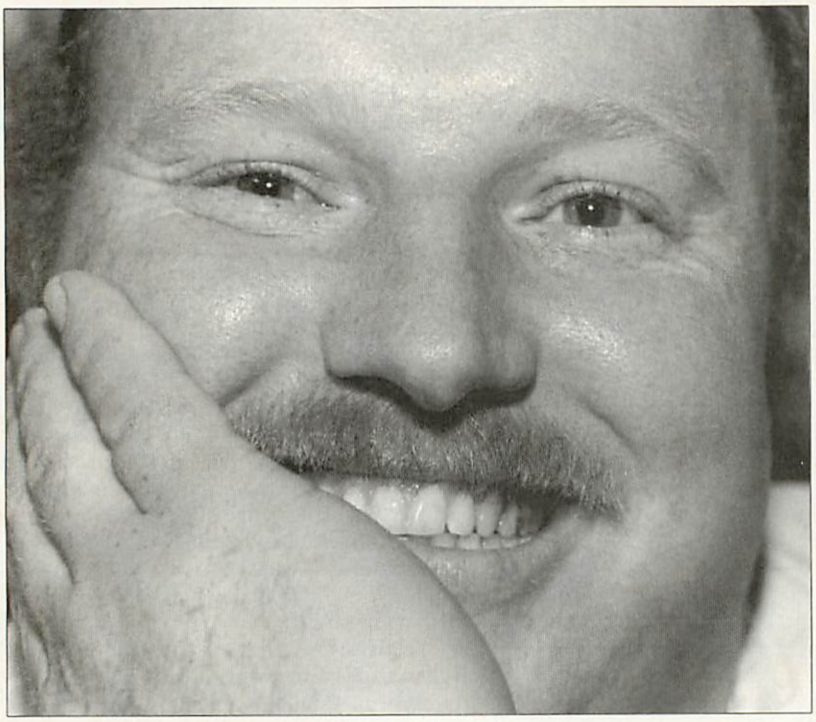
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The Moxon Interview

STEVE ARNOLD

> **'There are no such things as experts, just people who know more than you do'**

There are many different ways that people react to an interview situation. Some people are quite quiet, answering questions tersely, but with interesting and valid answers. Some talk a lot more, but don't necessarily say a great deal.

And then there are some that talk all the time, but everything they say is worth listening to. This is the kind of person that Steve Arnold, Chairman of The ARM Club, is. He talks a lot of sense – a *lot* of sense – and it's the least I'd expect from someone who runs the club for all the right reasons: it doesn't make money, and all income is re-invested in improving the club.

'I've always been interested in user groups,' says Steve, 'but the commercial aspect of some of them sticks in my throat. To me a user group is all about self-help and self-growth: I get a real kick out of helping other people to see how to do things, showing them the tricks that I've learned from other people about the machine, and showing off the things it can do.

'Besides, there are no such things as experts, just people who know more than you do, so a user group is an ideal place to learn about your machine.'

That's the whole *raison d'être* of The ARM Club: its aim is to help newcomers to understand and get the most out of their new machine, and to continue to grow and develop with it. But doesn't this show a lacking in the market, that a voluntary and non-profit-making organisation has to step into the breach to fill a gap that, some say, should be filled by Acorn training?

'Acorn is no worse than any other computer company as far as after sales support goes,' says Steve, 'but there is a need to help complete beginners. Remember that Acorn is a relatively small company, and it's performed miracles considering what it is. It's always growing and diversifying, too.

'I've always wanted to develop teaching seminars, open days and so on, so we can show off the *applications* of the hardware, rather than just running the latest graphics demo. If people see an Acorn machine they're amazed at what it can do, but if they get a computer and have to go through a tortuous learning curve, it puts them off: RISC OS is great, but to someone who has never used a computer before, it's a mystery.'

Well, if I was learning to compute, I know I'd rather it was on RISC OS than the ever-so-delightful Windows, but there are lots of families out there struggling to learn on PCs.

'Acorn can never compete with IBM and friends on the advertising front,' Steve points out, 'it just has to be cleverer. I think Acorn could try a little bit harder to be different.

'RISC OS 3 is still, to me, the definitive operating system, and this is one area that Acorn really is different from the opposition. From what I've seen of Windows 95, it's close to the standard of RISC OS 2. System 7.5 does have one or two advantages over RISC OS 3, but you need a hugely powerful machine to run it properly, unlike RISC OS.

'But there's still room for growth. I sometimes worry that Acorn will sit on the fence and just go with the flow without developing it further. I wonder if it hasn't got the internal resources necessary to develop it: RISC OS needs to be continually developed, even if it's just to fix problems like the FileCore bug.'

So what about the future of The ARM Club? There will always be a need for support for beginners, but how does Steve and the club's hard-working committee make sure The ARM Club will continue to attract members?

'I want to get more people to join,' says Steve, 'people who are interested in computing in a friendly, family atmosphere. There's always been the feeling that you are a kind of élite if you own an Acorn, but there's a danger that this can lead to technically élite user groups.

'One way to go is to encourage affiliated local user groups, such as the Welsh ARM Club. Then members have the advantage of a local group, with someone always there to help, rather than just a telephone help line; we then act as an "umbrella" over all the affiliated groups, with the local clubs remaining independent and self-determined.'

So, The ARM Club will continue to be a kind of Samaritans for new Acorn users, then?

'Making the difference, that's the whole point of the club,' says Steve. 'I want to be able to help the poor guy who's lost his hard disc at 7.30pm on a Friday night, and doesn't know what to do. There's always someone to help, and if they can't help, they can at least *listen*.'

What a nice man. A very nice man. A very, *very* nice man. AU

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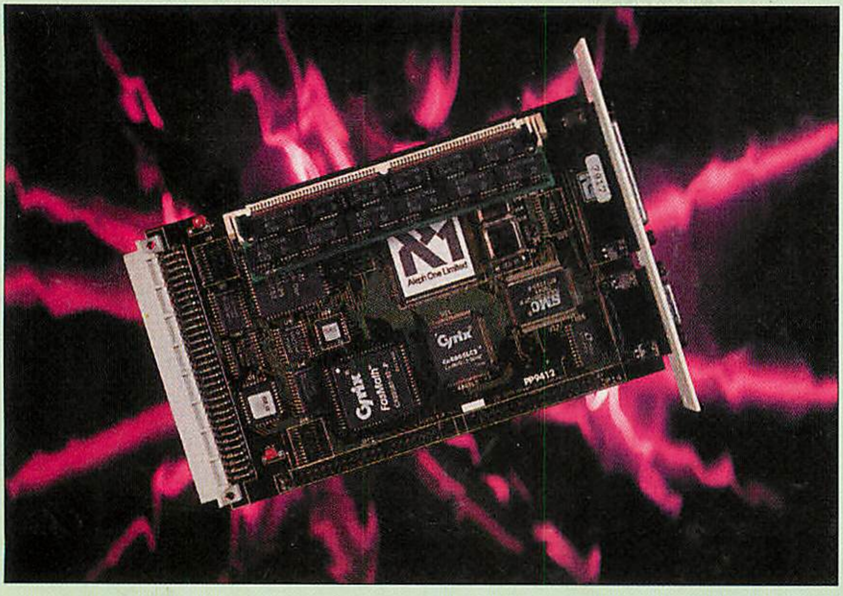
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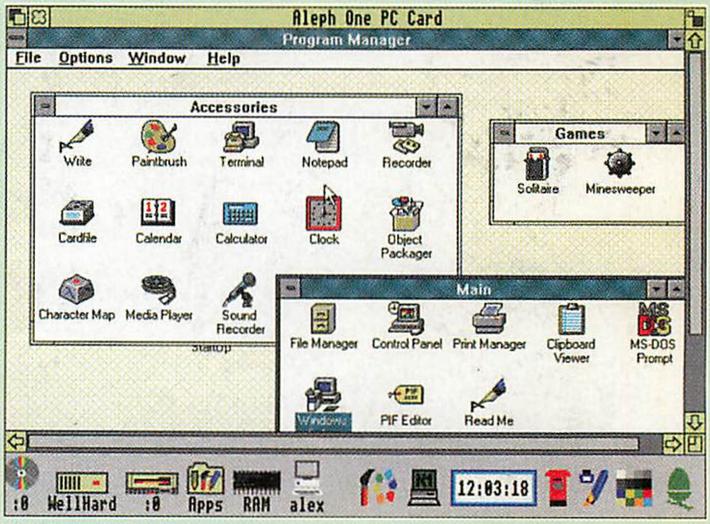
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